

Exhibit C

Part One

REDACTED
PUBLIC VERSION

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

UNITED STATES OF AMERICA,)
)
Plaintiff,)
)
v.)
)
DENTSPLY INTERNATIONAL, INC.,)
)
Defendant.)

ORIGINAL

TO BE FILED UNDER SEAL

**DEFENDANT DENTSPLY INTERNATIONAL, INC.'S
PROPOSED FINDINGS OF FACT**

CAUTION: This Memorandum contains information designated "Confidential" pursuant to the Court-entered Protective Order.

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DENTSPLY INTERNATIONAL, INC.'S PROPOSED FINDINGS OF FACT

I. SUPPLY AND DEMAND OF ARTIFICIAL TEETH

1. This case concerns the manufacture, distribution and sale of prefabricated artificial teeth in the United States. The parties stipulate that the relevant product market for purposes of this case is the sale of prefabricated artificial teeth in the United States. (GX445 at 6-8.)¹ Because the prefabricated artificial tooth market is mature and evolved with multiple fabrication and distribution levels, a detailed understanding of the market is necessary to properly analyze the issues presented by the parties' dispute.

A. Prefabricated Artificial Teeth Are Highly Differentiated Products That Encompass A Wide Variety Of Materials, Functional Designs, Styles, Price Points, And Physical Characteristics

2. Artificial teeth are manufactured in either porcelain or plastic. (Tr. 82 Weinstock.) Unlike porcelain teeth, which require fastening to a denture, plastic teeth can anchor to the denture chemically. (Tr. 3449 Miles.) Porcelain teeth are harder than natural teeth and as a result they wear against the opposing dentition, and wear down natural teeth. (Tr. 3449 Miles.) Plastic teeth, which are more like natural teeth, do not wear down opposing natural teeth. (Tr. 3449 Miles.)

3. Artificial teeth are classified as premium, mid-line, economy and sub-economy. (Tr. 82-84 Weinstock.) Premium artificial teeth combine superior aesthetics with extreme durability. (Tr. 2105-06 Jenson; *see generally* Tr. 1230 Ryan.) Economy artificial teeth offer less wear resistance and aesthetics than premium artificial teeth and

¹ The trial transcript will be cited in this memorandum as "Tr.," followed by the page number and name of the witness providing the testimony. Agency exhibits will be cited as "GX," and defendant exhibits will be cited as "DX."

are priced significantly less. (Tr. 2115-16 Jenson.) Sub-economy artificial teeth offer even less wear resistance and aesthetics and historically have sold for about \$1. These teeth are usually imported from South America. (Tr. 2250 Jenson.) Manufacturers of sub-economy teeth include Dentorium, Darby, Lincoln, Astron and Fricke. (Tr. 83 Weinstock.)

4. Artificial teeth are manufactured in thousands of shade and mould combinations. (D.I. 368, Ex. 1, Stipulation ¶ 10; Tr. 2101-02 Jenson; Tr. 82 Weinstock.) The shade of an artificial tooth is the coloring of the tooth. (Tr. 2101 Jenson.) The mould of an artificial tooth is the actual form or shape of the tooth. (Tr. 2100 Jenson; Tr. 3261 Langer.) Choosing the correct tooth mould is critical to ensuring that the denture patient chews correctly and maintains his or her proper bite. (Tr. 2102-03 Jenson.)

5. The market broadly classifies artificial tooth moulds as either "European" or "American." (Tr. 2125-26 Jenson; Tr. 1838-39 Becker (American teeth are "different than the European teeth in form and shape"); Tr. 4238-41 Keeling (European teeth have "completely different" shape and mould than American teeth.)) Aesthetically, European teeth are highly characterized, which means the teeth are more natural looking, and have cracks, nicotine stains and decalcification spots. (Tr. 3463-64 Miles; Tr. 4244-45 Lantz (European teeth, such as Enigma, contain more characterization and color variances).) Additionally, European moulds are stockier, heavier and more angular in nature than American moulds. (Tr. 2501 Clark; Tr. 2906-09, 2924-25 Mariacher ("European cut" teeth look like "sugar cubes").) European teeth have heavy interdigitation, which means the top and bottom teeth mesh together. (Tr. 3463-64 Miles.)

6. U.S. denture technicians, who are less familiar with European moulds than American moulds, find it more difficult to set teeth with European moulds. (Tr.

2501 Clark; Tr. 2906 Mariacher.) As a result, European moulds tend to have less customer acceptance in the United States. (Tr. 2501 Clark.)

7. American moulds are less characterized than European teeth, which means the teeth are whiter and brighter. (Tr. 3463-64 Miles; Tr. 1839 Becker.) American moulds tend to be less bulky and easier to set than the European teeth. (Tr. 2126-27 Jenson.)

B. Denture Fabrication Is A Multi-Stage, Labor Intensive Operation Requiring Repeated Interaction Among Dental Labs, Dentists And Their Patients Over Multiple Days

8. A denture is a removable prosthetic device² comprised of artificial teeth fixed in an acrylic or other base material that replaces some or all of a person's natural teeth. (D.I. 368, Ex. 1, Stipulation ¶ 11.) A full denture replaces all the natural teeth in a person's mouth. (D.I. 368, Ex. 1, Stipulation ¶ 15; Tr. 85 Weinstock.) A full denture is comprised of two parts: an upper arch and a lower arch. (Tr. 2498 Clark.) Each arch in a full denture uses 8 posterior teeth and 6 anterior teeth. (Tr. 3256-57 Langer.) The average cost of a denture or arch is \$800. (Tr. 2098-99 Jenson.) The average cost for both an upper and lower arch is \$1600. (Tr. 2099 Jenson.) The portion of the total cost of a full denture attributable to artificial teeth is approximately \$80. (Tr. 2099-2100 Jenson.) A partial denture replaces some natural teeth. A partial denture adjoins either natural teeth or a fixed prosthesis. (D.I. 368, Ex. 1, Stipulation ¶ 16; Tr. 85 Weinstock.)

² "Fixed" prostheses, by contrast, include crowns, bridges, and implants. A crown is a single, individual tooth restoration. A bridge is a restoration of at least three units bridging a gap of at least one missing tooth. An implant case is where a device is actually screwed into the bone. (Tr. 85-86 Weinstock.)

9. A denture prescription may contain a number of parameters, including a shade designation, a mould designation, a specific brand or a combination of these three items. (Tr. 2141 Jenson; Tr. 2332-33 Armstrong; Tr. 1215-18 Ryan; Tr. 1969-70 Jaslow.) A dentist typically receives two denture prescriptions. (Tr. 1965-69 Jaslow.) The first prescription specifies whether the dental lab is to construct a bite rim and/or a tray. (Tr. 1965 Jaslow.) The second prescription includes the parameters, mould or shade. (Tr. 1969 Jaslow.)

10. The information written in a denture prescription varies widely among dentists. Only 10% of dentists specify the brand of teeth to be used by name. (Tr. 2141 Jenson; Tr. 2332 Armstrong.) If a dentist prescribes the actual brand of artificial teeth, the lab almost always will use the brand of artificial teeth that is prescribed. (Tr. 2141-42 Jenson; Tr. 2333 Armstrong; Tr. 3261 Langer; Tr. 637 Harris.) Approximately 40% of denture prescriptions identify a mould designation and a shade. (Tr. 2141 Jenson.) The majority of denture prescriptions today include only a shade. (Tr. 2141 Jenson; Tr. 2333 Armstrong; Tr. 3330 Coykendall.) If a dentist does not include a brand designation, the lab generally has the discretion to use the artificial teeth that it prefers. (Tr. 2142 Jenson; Tr. 3259, 3291 Langer (use of Vita teeth due primarily to preference of Removable Department Manager); Tr. 636 Harris (dentist leaves decision to choose to lab).) The lab does this by cross-matching the designated manufacturer's shade to a similar shade in another brand of teeth. In this way, dental labs have the ability to select the tooth used in a particular denture. (Tr. 1221 Ryan; Tr. 3290 Langer.)

11. Denture fabrication comprises three stages: Bite Rim and Tray stage (2-3 working days) (Tr. 1963-68 Jaslow); Try-in or Setup stage (3-5 working days) (Tr. 1969-74 Jaslow; Tr. 3286 Langer; Tr. 1223 Ryan); and the Finishing stage (3 working days (Tr. 1974-76 Jaslow).) Artificial teeth enter the process during the Setup stage. (Tr. 1969 Jaslow.) Dental labs generally do not set artificial teeth during the first three days

of this process. (Tr. 1977-78 Jaslow (fourth or fifth day); Tr. 3287-88 Langer (lab needs artificial teeth about 2-3 days into the fabrication process).)

12. On average a dental lab exchanges a denture case with a dentist 3-4 times. (Tr. 1976 Jaslow; Tr. 3301 Langer; Tr. 1211, 1214-15 Ryan; Tr. 89 Weinstock (denture case "goes back and forth" between lab and dentist).) Dental labs require about 8-9 working days to fabricate a denture, excluding shipping time. (Tr. 1976-77 Jaslow; Tr. 3286 Langer; Tr. 2832, 2861-62 Challoner (approximately 48-hour turnaround time for each step of fabricating a new denture).) With the shipping time included, dental labs will fabricate a new denture within 14 days. (Tr. 1977 Jaslow.)³

C. Participants In The Artificial Tooth Market

13. Participants in the artificial tooth market fall into one of four categories: (i) dental laboratory; (ii) dentists; (iii) dealers; and (iv) manufacturers. (Tr. 80-81 Weinstock.)

1. Dentists Prescribe Certain Parameters Of The Artificial Teeth Used In A Denture

14. There are approximately 140,000 dentists in the United States (Tr. 91 Weinstock), 40,000 of whom are denture-doing. (Tr. 2144 Jenson.) Dentists receive their initial training on dentures during dental school. (Tr. 2136 Jenson.)

This training still represents a dentist's first exposure to artificial teeth.

³ Some labs offer a same-day denture. New dentures created on a same-day basis are inferior to those made in the standard 10-14 day period. (Tr. 3327 Coykendall; Tr. 3287 Langer (too hard to maintain quality; denture would look like the "Monday Carnival in Germany").)

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15. Dentists, excluding those who operate denture labs in their practices, are not direct participants in the artificial tooth market, in that they do not buy artificial teeth. (Tr. 81 Weinstock.) Instead, dentists order on their patients' behalves dentures containing teeth. (*Id.*) Nonetheless, dentists can play a major role in the market's dynamics. Dentists write prescriptions for artificial teeth, and thus have the ability to select specific tooth brands for use in a particular denture case. (Tr. 2546 Clark; Tr. 2141 Jenson; Tr. 1978 Jaslow; Tr. 81 Weinstock.)

16. Dentists represent the first point of contact with the end user of a denture. During the patient's first visit with a dentist, the dentist will help determine with the patient what needs to be corrected in the mouth. (Tr. 1211 Ryan.) The dentist will then take an impression of the patient's mouth and most likely create a mould to send to the dental lab. (Tr. 1211 Ryan; Tr. 3301 Langer; Tr. 89 Weinstock.) Dentists meet with patients between 3-4 times during the fabrication process to make sure that the denture appliance is right for the patient. For example, dentists must check whether the denture is aesthetically pleasing (e.g., whether teeth are too big, small, extended or stained) and whether the denture is functioning correctly (e.g., patient's bite is correct and patient can chew correctly). (Tr. 1973 Jaslow.)

2. Dental Laboratories Are A Heterogenic Group With Respect To All Aspects Of Artificial Teeth, Including Brand, Product Appearance, Product Functionality, Product Availability, Product Price And Service Level

17. Dental labs represent the last purchaser of artificial teeth as teeth standing alone. (Tr. 2514, 2526, 2557 Clark; Tr. 2163 Jenson; Tr. 2937-40 Mariacher; Tr. 1649-50 Reitman (labs are "immediate customers").) Through a labor intensive process, dental labs transform the teeth into an integral component of a new product. (Tr. 2557 Clark; Tr. 2163 Jenson; Tr. 81 Weinstock; Tr. 1964-78 Jaslow; Tr. 2925

Mariacher.) All of the manufacturers who testified at trial agreed that dental labs are the primary customers. (Tr. 2514 Clark (Dentsply); Tr. 987-88 Ganley (Ivoclar); Tr. 228, 241-42 Whitehill (Vita); Tr. 1351 Swartout (Myerson LLC).)

18. There are currently about 7,000 dental labs in the United States that make dentures ("denture labs"). (Tr. 2247 Jenson.) Of these, five thousand are full-service labs, while approximately 2,000-3,000 labs only fabricate dentures. (Tr. 511 Weinstock.) The number of denture labs in the United States has decreased steadily over the past ten years, largely as a result of consolidation and the emergence of large lab chains. (Tr. 2597-98 Clark.)

19. The large labs are those employing 25 or more denture technicians. There are only approximately 500 labs of this size in the country. Mid-size labs employ between 4 and 25 technicians. Approximately 11% fall into this category. The remaining labs are considered small labs; they employ four or fewer technicians. (Tr. 88 Weinstock.)

20. Notwithstanding the disparity in numbers between the large and small denture labs, large labs are a growing force in the market. For example

Large dental labs fabricate a significant number of dentures and purchase large volumes of artificial teeth. (Tr. 2529 Clark.)

21. Dental labs maintain artificial tooth inventories for use in fabricating dentures. (Tr. 1970, 1979 Jaslow; Tr. 2336 Armstrong; Tr. 2827 Challoner; Tr. 3256-57 Langer.) The demand for particular brands of teeth determines the size and make-up of a lab's tooth inventory. (Tr. 2863 Challoner.) If a lab has the brand of teeth in stock it needs to fabricate a denture, it will pull the tooth cards from the inventory. (Tr. 1970,

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2038 Jaslow.) If a lab does not have the tooth required in stock, it must place an order for that tooth from a dealer or manufacturer. (Tr. 1970 Jaslow; Tr. 2865 Challoner.) Labs will also place periodic orders for teeth to replenish their tooth inventories. (Tr. 2336 Armstrong.)

3. Dental Tooth Dealers Are Wholesalers Of Artificial Teeth Whose Number And Importance Have Decreased Throughout The Relevant Time Period

22. Dental dealers fall into two major categories: laboratory dealers, which carry products for dental labs and primarily service that customer (Tr. 1373-74 Kashfian; Tr. 1138 Crane); and operatory dealers, which carry products for dentists exclusively or in combination with dental lab products (Tr. 1138 Crane; Tr. 1313 Swartout; Tr. 72 Weinstock; Tr. 2179-86 Jenson). Both operatory dealers and lab dealers may carry and sell artificial teeth. (Tr. 2179-86 Jenson;

23. There are currently hundreds of dental dealers operating in the United States. (Tr. 1313 Swartout (Proof's directory has hundreds of local, regional and national dealers; Tr. 2404 DeSautel.) Over the past ten years, the market has experienced significant consolidation resulting in several large dealers and the geographic expansion of dealer territories as a result of the development of lower-cost, reliable overnight shipping, as well as the collateral emergence of mail order dealers. (Tr. 2577-78, 2597 Clark; Tr. 2187 Jenson.)

4. The Manufacturers In The U.S. Artificial Tooth Market Are Long-Standing Participants, Most Of Whom Are Well-Financed, Multinational Firms

24. There are currently 13 known foreign and domestic manufacturers of artificial teeth that sell their products in the United States. (Tr. 83 Weinstock; Tr. 2111-

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12 Jenson.) Two manufacturers—Davis Schottlander & Davis Ltd. and Heraeus Kulzer GmbH—have entered the United States market since the start of this case in January 1999. (Tr. 4079 Dillon; Tr. 1817 Becker.) The 13 manufacturers sell artificial teeth in some or all of the so-called sub-economy, economy, mid-line and premium segments. (Tr. 82-84 Weinstock.)

25. For purposes of this case, eight manufacturers are relevant: Dentsply International, Inc., the defendant; Vita Zahnfabrik; Ivoclar Vivadent AG; Myerson LLC; Heraeus Kulzer GmbH; Davis Schottlander & Davis Ltd.; Universal Dental Company; and American Tooth Industries (“ATI” or “Justi”). (Tr. 2111-12 Jenson.)

a. **Dentsply International, Inc.**

26. Dentsply International, Inc. (“Dentsply”) was founded in 1899 and is headquartered in York, Pennsylvania. (D.I. 368, Ex. 1, Stipulation ¶¶ 1-2.) Dentsply manufactures a range of professional dental products that are marketed, distributed and sold throughout the United States. (D.I. 368, Ex. 1, Stipulation ¶ 3.)

27. Dentsply’s artificial teeth are developed, designed, manufactured, sold and marketed out of York, Pennsylvania by its Trubyte Division. (D.I. 368, Ex. 1, Stipulation ¶ 8; Tr. 2097 Jenson.) Dentsply manufactures artificial teeth in the premium, mid-range and economy segments. (D.I. 368, Ex. 1, Stipulation ¶ 9.) Dentsply sells 14 different full lines of artificial teeth in the United States. (Tr. 2100 Jenson; GX160 (Zahn catalog) at 246.) Dentsply currently offers 16,000 tooth Stock Keeping Units (“SKUs”). (Tr. 2093 Jenson.) An SKU is an individual line item. (Tr. 1132 Crane.)

28. Through its Trubyte Division, Dentsply also manufactures and markets professional dental products used by dental labs to make dentures and other removable

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dental prosthetics. (D.I. 368, Ex. 1, Stipulation ¶ 6.) These dental products include acrylics, dental equipment, gypsums and wax. (Tr. 2080, 2093-94 Jenson.) Dentsply's complete Trubyte product offering currently totals 19,000 total SKUs. (Tr. 2093 Jenson.)

29.

30.

Dentsply also manufactures approximately 10,000 shade and mould combinations (Tr. 2101 Jenson; D.I. 368, Ex. 1, Stipulation ¶ 10). In total, Dentsply manufacturers 106,000 different types of tooth units. (Tr. 2101, 2114 Jenson.)

31. Dentsply differentiates its premium teeth from the premium teeth of its rivals through a variety of moulds, shades, aesthetics, fluorescence and durability. (Tr. 2114-15 Jenson.) The different shade and mould combinations that Dentsply offers influence the aesthetic value of any denture. The benefit to the dentist of choosing from among the vast Trubyte mould and shade combinations is the ability to fit the patient properly with the best and most aesthetic denture. (Tr. 2103-04 Jenson.)

32. Portrait IPN, Bioblend IPN, Bioform IPN and Trublend SLM are Trubyte's premium artificial plastic teeth. (Tr. 2109-10 Jenson.) IPN stands for Interpenetrating Polymer Network and describes the cross-linking of the polymers or molecules used in Dentsply's premium plastic teeth. (Tr. 2106 Jenson; Tr. 2489 Clark.) IPN's cross-linking nature provides clinically proven superior durability and wear resistance to that of regular plastic teeth.⁴ (Tr. 2106 Jenson; Tr. 2489 Clark.) SLM

⁴ Wear resistance measures the durability of a tooth or how it wears and how long it remains resistant to stains, fracture and discoloration. (Tr. 2488 Clark.)

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means Sustained Life Material. (Tr. 2109-10 Jenson.) It is a cross-linked tooth. (Tr. 2110 Jenson; Tr. 2488-90 Clark.) Trublend SLM clinically tested 25% more wear resistant than IPN teeth and 75%-90% more wear resistant than Ivoclar and Vita premium plastic teeth. (Tr. 2490 Clark.)

33. Dentsply offers 6,000 shade and mould combinations for IPN plastic teeth. (Tr. 2101 Jenson.) Compared to its leading rivals, Dentsply offers twice as many shade and mould combinations for its IPN lines as those rivals offer for *all* of their tooth lines. (Tr. 2102 Jenson; Tr. 3272 Langer (Ivcolar and Vita do not offer same range of shades and moulds).) Overall, Dentsply offers 17 brands of anterior and posterior teeth, with 5-90 mould options per brand and 6-24 shades per brand. (DX1672.) Vita, on the other hand, offers 2 brands, with 32-57 moulds per brand and 16-41 shades per brand. (*Id.*) Ivoclar offers 9 brands, with 10-39 moulds per brand and 19-20 shades per band. (*Id.*)

34. Dentsply offers two brands of economy teeth: Classic and New Hue. Economy teeth do not have the blending, aesthetics and wear resistance that premium teeth have. Additionally, economy teeth do not have the detail in mould forms and come in a limited selection of mould forms. (Tr. 2115-16 Jenson.) Vita and Ivoclar do not offer an economy line of teeth. (Tr. 2117 Jenson.)

b. Vita Zahnfabrik

35. Vita Zahnfabrik H. Rauter GmbH & Co. KG ("Vita") is a privately-held German company that manufactures and sells dental prosthetic materials. (Tr. 221 Whitehill.) These materials include a number of porcelain products, artificial teeth, equipment and dental implant accessories. (Tr. 224, 241 Whitehill.)

36. Vita has sold its artificial teeth in the United States at least since 1968. (Tr. 292-93, 380-81 Whitehill.) The brand name of Vita's plastic teeth is "Vitapan." The brand name of Vita's porcelain teeth is "Lumin Vacuum." (Tr. 225 Whitehill.) Vita manufactures teeth only for the premium segment. (Tr. 226 Whitehill.) In that segment, Vita produces around 2,000-3,000 shade and mould combinations. (Tr. 2101-02 Jenson.)

37. Vita's artificial teeth are the European mould style. (Tr. 2126 Jenson; Tr. 2924 Mariacher.) Specifically, Vita teeth come in Germanic moulds that are characterized by sharp edges. (Tr. 3466-67 Miles.)

38. In connection with its fixed and removable prosthetic materials, Vita manufactures a Vita Shade Guide. (Tr. 230-32 Whitehill.) Dentists use shade guides to match the shade of the prosthetic materials, *i.e.*, artificial tooth or porcelain for a crown, or with the shade of a patient's natural teeth. (Tr. 230-31 Whitehill.)

c. Ivoclar Vivadent AG

39. Ivoclar Vivadent AG, a Liechtenstein company, manufactures and markets artificial teeth and other dental restorative products and equipment. (Tr. 982-83 Ganley.) Ivoclar Vivadent AG is considered one of the leading companies in the crown and bridge market. (Tr. 982-83 Ganley.)

40. Ivoclar Vivadent AG has sold artificial teeth in the United States since approximately 1978 through its wholly owned subsidiary, Ivoclar Vivadent, Inc. ("Ivoclar"). (Tr. 982-83 Ganley.) Ivoclar is headquartered in Amherst, New York. (Tr. 982-83 Ganley.)

41. Ivoclar Vivadent AG sells a number of different lines of plastic artificial teeth in the premium segment, under the brand names SR-Vivodent-PE, SR-

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Vivodent, SR-Orthotyp-PE, SR-Orthotyp, SR-Orthosit-PE, Antaris, Postaris, and since January 2002, Orthoplane and Ortholingual. (Tr. 984, 1091 Ganley.) Ivoclar Vivadent AG manufactures between 2,000-3,000 shade and mould combinations for its artificial tooth lines, including its new lines. (Tr. 2102 Jenson.)

d. Myerson LLC

42. Myerson LLC ("Myerson"), headquartered in Chicago, Illinois, manufactures and sells artificial teeth. (Tr. 1291-92 Swartout.) Myerson manufactures its artificial teeth from a single factory in Trinidad. (Tr. 1356 Swartout.) Myerson currently is operating its tooth factory at one-third of its capacity. (Tr. 1320 Swartout.)

43. Prior to 2002, Myerson was the artificial tooth division within Austenal, a dental products manufacturer that sold and distributed various lines of dental products. (Tr. 1292-93 Swartout.) Mr. Swartout, President and COO of Myerson, and his family, along with other executives of Austenal's Myerson tooth division, paid \$5 million for the Myerson tooth business in November 2001. (Tr. 1363-65 Swartout.)

44. Myerson sells teeth in the premium line under Myerson, Swissedent and Universal brands, and in the economy lines under the Kenson brand. (Tr. 1294-95 Swartout; DX894 (Austenal 1998 price list).) In the mid-1990s, Austenal acquired the Swissedent line. (Tr. 1295 Swartout.) In Fall 2001, Myerson acquired some select Universal tooth lines, which Myerson now manufacturers and sells under the Universal brand. (Tr. 1295, 1340-41 Swartout.)

e. Universal Dental Company

45. Universal Dental Company ("Universal") manufactures and sells premium porcelain artificial teeth, and mid-range/economy plastic artificial teeth, all of

which comprise 10,000 SKUs. (Tr. 541-42 Weinstock; Tr. 2111-12, 2117 Jenson; GX160 at 246.) No witness testified on behalf of Universal at trial.

f. American Tooth Industries

46. American Tooth Industries ("ATI") manufactures a brand of teeth called Justi. (Tr. 540 Whitehill.) ATI markets Justi as an economy and midline tooth. (Tr. 2116-17, 2118 Jenson; No witness testified on behalf of ATI at trial.

g. Heraeus Kulzer GmbH

47. Heraeus Kulzer GmbH, a German company, manufactures artificial teeth. (Tr. 1834-35 Becker.) Heraeus Kulzer GmbH generates approximately \$7 billion in annual revenue (Tr. 1870 Becker), and its dental operation alone generates \$480 million (Tr. 4333 Becker.) Heraeus Kulzer GmbH has sold its artificial teeth in Europe since the 1960s. (Tr. 1835 Becker.)

In January 2000, Heraeus Kulzer GmbH introduced in the United States, through its subsidiary Heraeus Kulzer, Inc. ("Heraeus"), a mid-range tooth named JelDent. (Tr. 1817-18 Becker.)

h. Davis Schottlander & Davis Ltd.

48. Davis Schottlander & Davis Ltd. ("Schottlander") is a British manufacturer of artificial teeth called Enigma. In January 2001, Schottlander began

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selling Enigma teeth in the United States through Leach and Dillon. (Tr. 4079-80, 4088 Dillon; Leach and Dillon also has arranged to take orders for Enigma teeth through Lincoln Dental Supply, which is headquartered in Cherry Hill, New Jersey. (Tr. 2756, 2758, 2762 DiBlasi.)

II. DISTRIBUTION CHANNELS IN THE ARTIFICIAL TOOTH MARKET

49. The manufacturers participating in the United States artificial tooth market historically have distributed their teeth into the market in one of three ways: (1) directly to dental labs; (2) through dental dealers; or (3) through a hybrid system combining manufacturer direct sales and dental dealers.

A. Every Major Tooth Manufacturer Except Dentsply And Vita Has Sold Their Teeth Directly To Laboratories Throughout The Period 1987 Through 2000

1. Ivoclar Vivadent

50. Ivoclar has sold teeth directly to dental labs since at least 1986. (Tr. 983, 991, 1006 Ganley.) Indeed, except for two brief periods during the late 1980s and early 1990s in which Ivoclar experimented with two, geographically limited wholesale arrangements, there is no evidence that Ivoclar distributed teeth in a manner other than direct to dental labs since 1978. Similarly, Ivoclar sells its crown and bridge products and precious metals directly to dental labs. (Tr. 989 Ganley.)

51. Today, Ivoclar distributes its teeth to labs throughout the United States through a single distribution center located in Amherst, New York. (Tr. 1098 Ganley.) During the early 1990s, Ivoclar also distributed to labs from at least two other distribution centers in Sacramento, California and Atlanta, Georgia. (Tr. 1008 Ganley.) It consolidated its operation into Amherst after a couple of years. (Tr. 1009 Ganley.)

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52. Ivoclar promotes and sells its artificial teeth through a company sales force of approximately 30 sales representatives. (Tr. 1079 Ganley.)

Up to late 1998, the sales force handled Ivoclar's entire product line of teeth and crown and bridge products. (Tr. 987 Ganley.)

Today Ivoclar has six additional sales positions (five representatives and a regional manager) dedicated to artificial teeth. (Tr. 1078-79 Ganley.) Its main crown and bridge sales force still sells teeth. (Tr. 1079 Ganley.)

53. Dental labs that wish to order Ivoclar artificial teeth, whether to restock their inventory or buy an SKU that they do not stock, can either place the order when the Ivoclar sales representative calls on the lab or by calling Ivoclar's toll free number. (Tr. 1085-86 Ganley.) Ivoclar offers a variety of shipment options, from ground transport to overnight air. (Tr. 1099 Ganley; Tr. 2903-04 Mariacher; Tr. 3319 Coykendall; Tr. 3267 Langer.)

54.

All eight dental labs that testified live at trial purchase their teeth directly from Ivoclar: DSG (Tr. 2730 Obst); Langer Dental Arts (Tr. 3267 Langer); Hopkins Dental Lab (Tr. 3325, 3329 Coykendall); Jaslow Dental Laboratory (Tr. 1993 Jaslow); Sonshine Dental Lab (Tr. 1234, 1273 Ryan); National Dentex (Tr. 2913 Mariacher); Armstrong Dental Lab (Tr. 2343 Armstrong) and Lord's Dental Studio (Tr. 2834-35 Challoner).

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55. Mr. Coykendall testified that he has encountered absolutely no problems with this shipment arrangement for Ivoclar teeth in the 17 years he has been buying directly from Ivoclar. Mr. Coykendall rejected the idea that he would use more Ivoclar teeth if they were available from Marcus Dental Supply, a Trubyte dealer located less than 10 miles from Hopkins's facilities. (Tr. 3325, 3328-29, 3322 Coykendall.) The other Ivoclar customers who testified gave similar testimony. (Tr. 3267 Langer; Tr. 2337, 2344 Armstrong; Tr. 2834-35 Challoner; Tr. 2913 Mariacher.)

56. Ivoclar has consigned teeth to dental labs as an alternative to labs purchasing tooth stocks outright. (Tr. 1099 Ganley.) With a consignment, the lab gets a tooth inventory at no initial cost to the lab; instead, the lab pays for the teeth ordered to replenish the consigned teeth that it uses. (Tr. 345-46 Whitehill; Tr. 1985-86 Jaslow.) Normally, the lab commits to "turn" the inventory of teeth an agreed number of times each year in exchange for the manufacturer providing the consignment. (Tr. 1010 Ganley.) Many dental labs still have consignments of Ivoclar teeth. Dr. Armstrong, of Armstrong Dental Lab, testified that he has had a consignment of Ivoclar teeth worth several thousand dollars for many years. (Tr. 2342, 2344 Armstrong.) At year end 1998, Armstrong's Ivoclar stock accounted for 15% of its total tooth inventory. (Tr. 2368 Armstrong.) Langer Dental Arts also received a consignment of Ivoclar teeth in 1991. (Tr. 3268 Langer.) Before purchasing its stock of Ivoclar teeth outright, Hopkins Dental Lab first received a consignment of Ivoclar teeth. (Tr. 3313, 3318 Coykendall.)

2. Myerson LLC (Austenal)

58. Austenal distributed its Myerson and Kenson brand artificial teeth both through dealers and directly to dental labs. (Tr. 1298 Swartout; *see e.g.*, DX917.) Dental labs placed tooth orders with Austenal via telephone. (Tr. 1301-02 Swartout.) Austenal shipped its artificial teeth directly to dental labs nationwide from its Chicago, Illinois location. (Tr. 1343 Swartout.) Austenal also provided tooth consignments directly to labs. (Tr. 1351 Swartout; *e.g.*, DX115.) In 1997, Austenal introduced a free automated inventory and order system for dental labs. (Tr. 1355 Swartout.) This system allowed labs to use an infrared wand to scan the specific tooth needed and delivered the order directly to Austenal. (Tr. 1355 Swartout.) Austenal also distributed its teeth through a network of 12 dealers. (Tr. 1298 Swartout.) These dealers include Dentsply's largest dealer, Zahn. (*Id.*)

59. Despite Austenal's relationships with dealers, its hybrid system is slanted heavily to direct sales to labs. Austenal has engaged in efforts to make it more convenient for dental labs to purchase artificial teeth directly. (Tr. 1355 Swartout.) By 1999, approximately 85% of Austenal's artificial tooth sales were direct to lab customers. (Tr. 1351 Swartout.) Nevertheless, Austenal committed limited resources to these direct sales efforts. Myerson conceded that between 1990-1993, Austenal used no outside sales representatives to promote teeth. In 1994, Austenal used just one or two representatives responsible for all product lines, including teeth. (Tr. 1359-60 Swartout.) Reynolds Challoner of Lord's Dental Studio described Myerson's tooth promotional efforts as "almost nonexistent." (Tr. 2841 Challoner; *see also* Tr. 1998 Jaslow (Myerson does not offer any tooth seminars; Myerson representative does not offer any tooth services); Tr. 2784 DiBlasi (no demand for Myerson Kenson teeth); Tr. 3321-22 Coykendall (no demand for Kenson teeth).) No lab representative testified at trial that Myerson engages in any significant marketing or promotion.

60. Austenal employed independent commissioned agents to assist with its direct lab tooth sales. (Tr. 1298 Swartout.) Austenal used Guggenheim Dental in Hawthorne, California, Preferred Professional Supply in Lemet, California, Hendon Dental Supply in Arlington, Texas, and Abacus Dental Supply in Clovis, California as commissioned agents. (Tr. 1346-1347 Swartout.) Under this arrangement, the agents provided Austenal with artificial tooth orders from dental labs and Austenal shipped the teeth directly to the labs. (Tr. 1324-25 Swartout.) The agents had responsibility for maintaining and servicing the tooth stock within the dental lab. (Tr. 1326 Swartout.) The agent earned a commission on the value of the sale – usually 20%. (Tr. 1325-26 Swartout.)

61. Myerson LLC, the successor company to Austenal, continues to sell teeth directly to labs. Two of the labs appearing at trial buy directly from Myerson: Jaslow Dental Lab and DSG. (Tr. 1997 Jaslow; Tr. 2727 Obst.) Myerson's national sales efforts are the responsibility of five sales representatives and one currently vacant manager slot. (Tr. 1292 Swartout.)

3. American Tooth Industries

62. American Tooth Industries, which makes the Justi brand of teeth, distributes artificial teeth directly to dental labs such as National Dentex, one of the country's largest lab chains, and through a network of Trubyte and non-Trubyte dealers. (Tr. 2899 Mariacher; DX1599.) ATI's dealers include Dentsply's largest Trubyte dealer, Zahn, another large Trubyte dealer, Atlanta Dental, and Arnold Dental Supply. (Tr. 620 Harris; DX1599.)

4. Universal

63. Universal distributes artificial teeth directly to dental labs from one location in Montgomeryville, PA. (Tr. 4342 Burkhardt; Tr. 2345-46 Armstrong (Armstrong Dental Lab has purchased teeth directly from Universal since 1971); Tr. 2001-02 Jaslow (Jaslow Dental Lab also has purchased directly from Universal).) During the time period that 16 of 36 Trubyte tooth dealers⁵ carried Universal teeth, Universal nonetheless distributed teeth directly to dental labs and

Universal also distributes artificial teeth to dental labs through a network of dealers. (DX1599.)

5. Heraeus Kulzer GmbH

64. Heraeus Kulzer GmbH sells and distributes its JelDent tooth lines directly from its Armonk, New York location through Heraeus. (Tr. 1843 Becker.) Heraeus entered the U.S. market with direct distribution in January 2000. (Tr. 1817, 1823 Becker.) Prior to entry, Heraeus was fully aware of the functions tooth dealers perform in the U.S. market, and was unable to obtain distribution through Trubyte dealers. (Tr. 1818-23.)

and chose to sell direct using its crown and bridge and precious metals sales force (Tr. 1823, 1832-33 Becker).

65. Heraeus sells and promotes its artificial teeth through a sales force of 15 sales representatives. (Tr. 1832 Becker.) These sales representatives also are

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responsible for selling and promoting the entire line of Heraeus's lab products, including porcelain and precious metal alloys. (Tr. 1832-33 Becker.)

66.

As with Ivoclar, dental labs that want to buy Heraeus Kulzer artificial teeth can place the order when the Heraeus sales representative calls on the lab, by calling Heraeus's telephone number or even using a Palm Pilot scanner. (Tr. 1844 Becker.) Generally, the company will ship its artificial teeth overnight for next day delivery depending on when the order initially was received. (Tr. 1867-68 Becker.)

67. In 2000, Heraeus exceeded its forecasted sales of \$350,000 by nearly

and intends to meet its objective of becoming the second leading tooth company in the United States (Tr. 1869 Becker).

68. Heraeus also consigns its teeth to dental labs. In its first year in the U.S. tooth market, Heraeus placed 102 tooth consignments in dental labs. (Tr. 1859-60 Becker.) Heraeus exceeded its own goals for placing consignments by 12%. (*Id.*)

B. It Is Undisputed That Selling Direct Is A Viable Method For The Distribution Of Artificial Teeth

69. The agency's expert economist concedes that direct distribution is a "viable" method of distributing artificial teeth. (Tr. 1650 Reitman ("Yes, I would call it

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viable".) Its expert agreed that "any artificial teeth manufacturer can sell its teeth to any dental laboratory [] in the United States that it wants to." (Tr. 1687 Reitman.)⁶ Its expert also agreed that Dentsply's rivals are "not foreclosed" from the U.S. market for artificial teeth. (Tr. 1573 Reitman.) Dr. Reitman conceded that Dentsply's rivals are "not foreclosed from a substantial share of those labs," which, he acknowledged, are the "immediate customers" in the artificial tooth market. (Tr. 1649-50 Reitman.)

1. Tooth Manufacturers Do Not Require A Network Of Tooth Stocks To Sell Teeth To Labs

70. During the past 10 years, dealers have consolidated the number of tooth stocks from which they fill orders for teeth. (Tr. 2187, 2194 Jenson; Tr. 2577 Clark; Tr. 2427-28 DeSautel; Tr. 105, 127-28, 492 Weinstock.) Zahn Dental Supply has reduced the number of company tooth stocks it uses to service its nationwide customer base from 13 in 1996 to between 5 and 9 in 2002. (Tr. 477-478, 492 Weinstock; Tr. 2258-60 Jenson.) Darby Dental Supply has had eight different tooth stocks since 1990 (Tr. 4374-75 Nordhauser; Tr. 4376-77 Nordhauser; [redacted] today has approximately 6 stocking locations (Tr. 4107-08 Nordhauser), but "primarily" services the entire United States from one stock. (Tr. 2180 Jenson.). Darby Dental has five sales representatives that handle artificial teeth. (Tr. 4111 Nordhauser.) Darby handles the accounts receivable (*id.* at 4112) and believes that it has a good relationship with lab accounts. (*Id.*)

71. Dr. Reitman agreed that "with the current widespread availability of overnight express mail ... dental labs can generally get teeth delivered the next day after placing an order with the manufacturer or a dealer, regardless of where the shipper is located." (Tr. 1687 Reitman.)

⁶ Dentsply notes that the court reporter added the word "dealer" after "laboratory" in error.

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72. The advent of Federal Express and other similar delivery services facilitated this market consolidation. These types of delivery services have made a card of teeth a very transportable item, one that can be shipped over broad geographies relatively cheaply and quickly. (Tr. 2577-78 Clark; Tr. 2429-30 DeSautel; Tr. 2775 DiBlasi (not necessary for Lincoln to be local to customers to distribute teeth); Tr. 1099 Ganley (Ivoclar ships overnight); Tr. 250 Whitehill (Vident ships tooth products overnight); Tr. 4321-22 Bauman (Vita can ship teeth next-day delivery for \$2.95); Tr. 1289-90 Ryan ("not a huge cost" to have Vita teeth shipped from Bego in Connecticut to lab in Delaware); Tr. 3267 Langer (Langer Dental Arts pays "very nominal charge" for overnight delivery from Ivoclar to lab in Idaho.) These tools empowered dealers to service their lab customers' needs from strategically placed stocks. (Tr. 2577-78 Clark; Tr. 3490 Miles (today tooth stocks are much more regional in nature).)

73. Dealers service the tooth needs of their lab customers effectively throughout the United States with a limited number of tooth stocks, in many instances just one. (Tr. 492, 504 Weinstock; Tr. 2770-71 DiBlasi (Lincoln Dental services entire country from one stock location in Cherry Hill, NJ); Tr. 2426 DeSautel (AccuBite Dental services entire country from one location in Michigan); Tr. 2276 Jenson; Tr. 4107-08 Nordhauser; Tr. 2045, 2070 Silcox.) Mr. Weinstock testified that a dealer "can deliver anywhere in the United States out of one facility." (Tr. 503, 504 Weinstock.)

74. It makes financial sense for dealers to consolidate tooth stocks. The consolidation reduces expenses for overhead and labor (trained tooth counter specialists) associated with a tooth stock; dealers can amortize those costs over one centralized stock or a series of regional stocks. (Tr. 501 Weinstock; Tr. 2577-78 Clark; Tr. 2426-28 DeSautel.) When Darby purchased DTS, it consolidated DTS's New York stock with the existing Darby tooth stock in New York. (Tr. 4375-76 Nordhauser.) Zahn concluded that having multiple tooth stocks was inefficient. (Tr. 501 Weinstock; DX1549 at

2000015 ("widely dispersed tooth counters . . . [are] inefficient and difficult to manage").) Mr. Weinstock also testified that he believes the consolidation of tooth stocks was a smart business decision because it allowed Zahn to reduce its inventory and through properly managing that inventory increase the number of inventory turns annually. (Tr. 488-495 Weinstock.) Zahn made acquisitions of several competitive tooth dealers during the past 5 or 6 years. (Tr. 495-501 Weinstock.) In each instance, Zahn closed the acquired dealer's tooth stock and chose to service those new lab customers from Zahn's remote tooth distribution centers. (Tr. 495-501 Weinstock.)

75. The evidence regarding Dentsply's drop shipments of teeth further minimizes the importance of tooth stocks as a dealer service.⁷ With drop shipments, the lab places the tooth order with the dealer. The dealer, in turn, submits the order to Dentsply with the request to ship the order directly to the lab. The dealer bills the lab at the price set by the dealer, and Dentsply bills the dealer at the price set by Dentsply. The teeth used to fill the order, however, come from Dentsply's York, Pennsylvania facility, not the particular dealer's inventory. The number of tooth orders Dentsply drop-ships to

⁷ The agency relies on a 1993 Dentsply letter to Zahn regarding the authorization of J&S Dental as an authorized tooth dealer as support for the proposition that Dentsply "itself" recognizes the importance of having local tooth counters. (Agency PFF ¶ 69.) Even if this were true as of 1993, Mr. Weinstock conceded that there was more of a need in 1993 than today for same-day pickup of teeth. (Tr. 539 Weinstock.) However, the record evidence overwhelmingly demonstrates that dealers can service labs more efficiently from central or regional tooth stocks. The only example of Dentsply attempting to slow the tooth consolidation process involved Patterson's plans to consolidate tooth stocks in 1996. (Tr. 265-58 Clark.) Mr. Clark testified that he encouraged Patterson to do more market research on consolidation not because he wanted more local tooth stocks, but because he did not want Dentsply to have to accept all of Patterson's tooth returns at one time; he was trying to "buy time." (*Id.*)

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76. Even labs that purchase through dealers overwhelmingly testified that they would rather purchase teeth directly from manufacturers if they could obtain a small price discount. (Tr. 4239, 4281 O'Brien (would purchase teeth direct if savings were 2%; if service performed by manufacturer matched current dealer, would switch with only 1% savings); Tr. 4325-26 Popp (would purchase teeth directly from Dentsply for 10% savings and probably for 5% savings); Tr. 4213 R. Fox (would purchase Vita teeth directly from Vident if savings were 10%); Tr. 4257-58 Moyer (would be interested in purchasing Dentsply teeth direct at a 10% discount); Tr. 4175-76 Boshoven; Tr. 4297 Thayer.) Labs prefer to buy direct because of potential cost savings attributable to elimination of the dealer middleman. (Tr. 2341, 2356-57 Armstrong (would prefer to purchase direct from Trubyte rather than from Zila Dental, a "middle man," because of "price"); Tr. 2004 Jaslow (would not hesitate "a heartbeat" to buy direct from Trubyte; primary consideration is "price"); Tr. 2857 Challoner (wanted to bypass Patterson and purchase direct because dealer earns "40 percent markups" for "very little service" and does not "bring value"); Tr. 2957-58 Mariacher (would prefer to buy Trubyte teeth direct rather than from Zahn because he "can buy from the manufacturer at a lot less cost than [he] can from a dealer"); Tr. 3280-81 Langer (generally prefers to purchase products directly from a manufacturer rather than through dealers). Betsy Harris of Atlanta Dental Supply testified that "the majority" of labs that receive a better price from direct selling manufacturers will choose to buy direct instead of through a dealer. (Tr. 627-28 Harris.) For that very reason, Atlanta Dental does not like to compete with ATI for the sale of Justi artificial teeth to labs. (Tr. 626 Harris.)

**2. Dentsply's Rivals Have Replicated Or Could
Replicate The Dealer Function**

77. The agency identifies 16 services or perceived benefits that dealers provide that the agency claims a direct distributor purportedly cannot provide or replicate. (Agency PFF ¶ 62-90.) Ivolcar and Vident already provide these services.

78. One perceived benefit the agency cites is local availability of teeth. (Agency PFF ¶¶ 63-64). At trial, the lab witnesses testified that they do not purchase teeth from the nearest dealer. (Tr. 1260, 1267-68 Ryan; Tr. 3269-70 Langer; Tr. 2954 Mariacher.) Dentsply tracks monthly for each of its dealers the dollar value of tooth shipments from a particular dealer tooth stock in a report called "zip-to-ship." (Tr. 2187-2188 Jenson; DX1589.) The data shows that there is no direct relation in terms of sales of artificial teeth between where a dealer maintains a tooth stock and where it does not have a tooth stock. (Tr. 2188 Jenson.) Zahn testified that it . . . worth of teeth in Pittsburgh, where it does not have a tooth stock. (Tr. 486 Weinstock.)

, two Trubyte dealers that do have tooth stocks near Pittsburgh. (Tr. 486-87 Weinstock;

79.

Zahn and Darby, Dentsply's fastest growing dealers, make substantial sales in states where they have no stocks. (Tr. 482, 506 Weinstock.)

80. The agency cites to its own expert for the unremarkable proposition that "relationships are important" in the dental industry. (Agency PFF ¶ 70.) Based primarily on the testimony of Judd Ryan from Sonshine Dental Lab and Ralph Langer of Langer Dental Arts, the agency cites as "fact" that the relationship a dealer shares with a

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dental lab is a benefit the dealer can provide to a dental lab. (*Id.*) Sonshine Dental Lab out of Bear, Delaware and Langer Dental Arts out of Boise, Idaho purchase artificial teeth from DLDS, a dental dealer located hundreds of miles away in Connecticut. This fact alone undermines the agency's claim that local availability of artificial teeth is important to a lab. (Agency PFF ¶¶ 63-64.)

81. The agency also cites "one-stop shopping" as a purported benefit that dealers provide to dental labs (agency PFF ¶ 76), even though the agency admits that its use of the term "one-stop-shopping" is misleading. (*Id.*) The benefit the agency identifies merely is reducing the number of vendors labs use (not eliminating all but one) by purchasing multiple products from vendors. (*Id.*) Dentsply's leading rivals already offer this sort of one-stop shopping to their lab customers. With just one phone call, a lab can order from Ivoclar all materials necessary for crown and bridge and denture construction (including artificial teeth, porcelain, ceramics, precious metals, gypsum, waxes, stone, supplies and equipment). (Tr. 1084-85 Ganley; Tr. 522 Weinstock; Tr. 3281 Langer ("Ivoclar has a multitude of products, so when I order some teeth, at the same time I might order some porcelain, I might order some equipment, I might order some alloy. Everything comes from the same facility. It's shipped in the same box, which is saving a little bit on shipping overall.").) A lab also can call Vident directly and purchase porcelains, metals, equipment, artificial teeth and implant accessories. (Tr. 221, 224 Whitehill.)

82. By contrast, when a lab needs to order teeth and precious metals, it cannot make "one stop" and purchase those products from Zahn. (Tr. 508-10, 522 Weinstock.) The lab will have to call two vendors. (*Id.*) Even when a lab can buy multiple products from a dealer, it often has to make two phone calls and, in some cases, will receive multiple invoices. (Tr. 514-16 Weinstock.)

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83. The business of full service labs is geared significantly more towards crown and bridge products than teeth. (Tr. 2842 Challoner (Lord's annual purchases from Ivoclar totaled \$120,000, only \$9,500 of which were artificial teeth); Tr. 4275-77, O'Brien (sales are 92%-93% crown and bridge, 7%-8% removables (both full and partial dentures); purchases from Ivoclar are 99% crown and bridge, 1% teeth); Tr. 4329, 4331 Watkins (8%-10% of sales are removables, remainder is crown and bridge; purchases from Ivoclar are 98% crown and bridge, 2% teeth); Tr. 4194 Fichter (sales are 85% crown and bridge, 15% removables); Tr. 4217-18 Haynes (sales are 78% crown and bridge, 22% removables); Tr. 4311, 4314 Wong (sales are 90% fixed prosthetics overall (including crown and bridge), and less than 10% of gross revenue comes from premium teeth); Tr. 4290-91 Thayer (sales are 75% crown and bridge, 10% implants, 15% removables; purchases from Ivoclar are 90% crown and bridge, 10% teeth.);

Tr. 4178 Colgin

(sales are 55% crown and bridge, 30% teeth, and 15% partials);

; Tr.

4260 Murphy (sales are more than 50% crown and bridge).) As such, their suppliers tend to be weighted toward manufacturers of crown and bridge products, such as Ivoclar and Vita.

84. In any case, labs tend to purchase their dental products from multiple dealers and multiple direct selling manufacturers. (Tr. 2008-10 Jaslow (buys from "probably 70, 80" dealers and distributors); Tr. 2357-58 Armstrong (20-25 vendors); Tr. 3262-63, 3267, 3284-85 Langer (10-12 vendors); Tr. 2831 Challoner ("five or six different distributors and probably another 15 or 20 suppliers"); Tr. 2955-57 Mariacher (35-50 "large" vendors, and other small distributors); Tr. 2733 Obst (multiple vendors);

Tr. 511-12 Weinstock (most labs purchase from multiple vendors).)⁸ Even Mr. Ryan of Sonshine Dental Lab, an agency witness, testified that it was his standard practice to use different vendors. (*Id.* at 1272.) According to Mr. Ryan, the difference between purchasing teeth from one supplier or multiple suppliers is the time it takes to fax one order versus two or three. (Tr. 1286 Ryan.) Sonshine uses multiple vendors for its dental supplies, including DLDS, Bego, Patterson, Zahn and Jelenco. (*Id.* at 1270-71.) Additionally, a Zahn-sponsored survey revealed that Zahn's lab customers purchase from several other dealers. (Tr. 512-13 Weinstock.)

85. The agency also argues that labs can take advantage of volume discounts offered by dealers. (Agency PFF ¶ 78.) The trial record reveals, however, that Dentsply's rivals have offered volume discount programs with large lab chains and buying groups since the early 1990s. During this time Ivoclar and Vident offered "volume proposals" to TEREC, which prompted TEREC to approach other suppliers, including Dentsply, about offering better pricing options. (Tr. 2848-49 Challoner; *see generally* DX60 (Vita and Ivoclar proposed tiered pricing packages to TEREC).) TEREC sought to purchase teeth directly from Dentsply as a means of obtaining discounted pricing to match Vita and Ivoclar's volume discount programs. While Dentsply did not agree to sell teeth to TEREC directly, it responded to Ivoclar's and Vident's volume proposals with its own volume discounts. Dentsply provided TEREC labs with an "incentive rebate agreement" as part of the new Preferred Laboratory Program. (Tr. 2849-50 Challoner.)

⁸ See also Tr. 4183-84 Colgin (lab purchases from 12 vendors); Tr. 4186, 4188-91 Cook (13 vendors); Tr. 4206-09, 4214 Fox R. (10-12 vendors); Tr. 4231, 4233-38 Keeling (11 vendors); Tr. 4242-44 Lantz (11 vendors); Tr. 4254-57 Moyer (at least 8 vendors); Tr. 4272-75, 4277-79 O'Brien (13 vendors); Tr. 4284-89 Peebles (12 vendors); Tr. 4291-93, 4295-96 Thayer (9 vendors); Tr. 4298-4303 Willits (17 vendors); Tr. 4308-13 Wong (14 and a "whole lot of others").

86.

Myerson/Austenal offers DSG a rebate on purchases. (DX372.) DSG also participates in a preferred laboratory program offered by Ivoclar that allows it to purchase non-tooth products at a discount. (Tr. 2730 Obst.) National Dentex has national contracts with all of Dentsply's leading rivals including Ivoclar, Vident, Universal, Justi, Dentorium and Heraeus Kulzer. (Tr. 2898-2900 Mariacher.) Its relationship with Vident allows National Dentex to obtain the "lowest form of discount on all the product line." (Tr. 2927 Mariache; *see e.g.*, DX356 (list of "special discounts" offered to National Dentex labs).) The more products National Dentex purchases from Ivoclar, the bigger the discount it receives. (Tr. 2902 Mariacher.) Heraeus sells directly to National Dentex at the "lowest discounted cost." (Tr. 2930 Mariacher.)

87. Another service cited by the agency is handling accounts receivable. (Agency PFF ¶ 84.) Some tooth dealers manage the accounts receivable for lab tooth purchases. (Tr. 134-35 Weinstock; Tr. 1134 Crane.) The accounts receivable function involves invoicing the lab customer for teeth purchased, collecting payment, providing credit and at times extending credit terms. (Tr. 134-35 Weinstock.) For Dentsply tooth dealers, the accounts receivable or "financial management" responsibility is their primary role. (Tr. 2586 Clark; Tr. 2197 Jenson; Tr. 459-60 Turner ("most important role for dealer organization").)

88. Manufacturers already manage the accounts receivable for lab non-tooth purchases, *i.e.*, crown and bridge materials and precious metal alloys. Ivoclar manages the receivables on all of its products for nearly 6,000 labs. (Tr. 1081-83 Ganley.) Until the creation of Myerson LLC in 2002, Austenal sold crown and bridge materials directly to thousands of dental labs. (DX1301; DX1302; Tr. 1298-99, 1369-70

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Swartout.) Heraeus also sells precious metals and porcelains directly to labs. (Tr. 1833, 1836 Becker.) These manufacturers, therefore, already are responsible for managing voluminous accounts receivable. Even Vident, which the agency argues is a supplier and similar to manufacturers, by choice does not use its sub-dealers for crown and bridge materials and thus manages those thousands of lab accounts. (Tr. 343-44 Whitehill.)

89. Significantly, the evidence shows that even the biggest tooth dealers do not carry precious metals because of the accounts receivable issue. (Tr. 509 Weinstock; Tr. 4146 Nordhauser.) This evidence refutes the contention that dealers are in a better position to manage this part of the tooth business. (e.g., Tr. 343-44 Whitehill; 1082-83 Ganley.)

90. There was some anecdotal evidence that labs are in some way a credit risk. (Agency PFF ¶ 84; Tr. 1140 Ganley; Tr. 93 Weinstock.) The evidence of the manufacturers' management of crown and bridge receivables dispels the suggested inference that the creditworthiness issue somehow makes dealers' management of receivables non-replicable. Ivoclar's crown and bridge sales to labs are multiple times larger than its tooth sales to those labs, yet Ivoclar chooses to manage the crown and bridge sales directly. (Tr. 989-90 Ganley.)

91. The agency also touts the management of dental lab inventories as a valuable dealer service. (Agency PFF ¶¶ 71-73.) Some tooth dealers help manage the tooth inventories that labs keep on site. (Tr. 1309 Swartout.) This responsibility may consist of calling on the lab, reviewing what tooth cards need replacement, placing orders for teeth and sometimes handling the return of broken sets. (Tr. 1500 Reitman; Tr. 2585-86 Clark.) Other dealers handle inventory management over the phone (Tr. 648 Harris), while still others establish programs to teach labs to manage their inventories in-house. (Tr. 135 Weinstock.)

92. Dentsply's rivals already use their respective company crown and bridge and/or tooth sales reps to perform this service, and no lab testified that this arrangement does not meet their tooth inventory management needs. Labs prefer to manage their tooth inventories in-house. (Tr. 1843 Becker (labs perform in-house management "to a great extent"); Tr. 3314-15 Coykendall ("definitely" does not see a need for Ivoclar to manage his tooth stock; "a lot easier" for in-house personnel to keep track of tooth usage trends); Tr. 3277-78 Langer (was very "uncomfortable" allowing Patterson to manage inventory because he "had no control").) The labs that testified at trial on this issue all managed their own tooth inventories. (Tr. 3264, 3269, 3279-80 Langer; Tr. 3314-15 Coykendall; Tr. 2962 Mariacher; Tr. 2836-37 Challoner; Tr. 1987-89, 1996-98 Jaslow; Tr. 2340-41, 2343-44 Armstrong.)

93. Dealer sales representatives do not call on the labs that buy teeth.

.⁹ Darby Dental Supply manages approximately 28% of its lab customers' inventories. (Tr. 3422-23 Nordhauser.) Patterson Dental Supply used just four representatives to call on all of its lab accounts until about 1995, when Dentsply hired one of these representatives. (Tr. 2586-87 Clark.) There is no evidence in the record that Patterson ever replaced this lab representative, or had sufficient personnel to manage its customers' tooth stocks. (*Id.*) Moreover, tooth inventory management is not very time-intensive; the lab witnesses estimated this job to take anywhere between one to four hours each month. (Tr. 2342 Armstrong; Tr. 2836-37 Challoner; Tr. 3314-15 Coykendall; Tr. 1987 Jaslow.)

⁹ Zahn's 18 sales representatives are responsible for selling thousands of products in the Zahn catalog. (Tr. 475 Weinstock; GX160.)

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94. The agency also claims dealers offer "same day" delivery of artificial teeth. (Agency PFF ¶¶ 66-69.) The evidence is abundantly clear that labs do not require same day receipt of teeth. (Tr. 2015 Jaslow ("never" needed teeth on same day in 32 years in business); Tr. 2394 Armstrong (best estimate of need for same day is "practically none"); Tr. 2834, 2866 Challoner (less than 5% of cases need same day service, but can use teeth from inventory); Tr. 2953-54 Mariacher (only 1 lab out of 34 can even receive teeth on a same day basis); Tr. 3288 Langer ("absolutely [does] not" need teeth on same day for new dentures; uses broken sets for repair cases); Tr. 3325-26 Coykendall (has never needed teeth on same day for new dentures; commonly pulls teeth from stock for repair cases).)¹⁰ The only dental lab called by the agency as a witness, Sonshine Dental Laboratories, testified that it "never established a need to have teeth delivered to [his] lab the same day" the teeth are ordered. (Tr. 1284 Ryan; *see also* Tr. 1171 Raths (tooth customers preferred next-day delivery over same-day delivery); Tr. 2774 DiBlasi (2-3 days delivery time sufficient to meet customer needs); Tr. 1439 Vetrano (next-day service or two-day service is satisfactory to customers); Tr. 2061 Silcox (customers generally receive orders the following day).)

95. The agency cites to Norman Weinstock's testimony to support its proposed finding that "labs prefer" to buy teeth on the "same day" that they order the teeth. (Agency PFF ¶ 68.) Mr. Weinstock's testimony, however, was that dental labs have a "mistaken perception" of the need to have local tooth stocks and that Zahn successfully has demonstrated that it can "deliver anywhere in the United States out of

¹⁰ *See also* Tr. 4382-83 Fichter (one or two denture cases out of 200 to 250 cases request same day delivery); Tr. 4304 Willits (has never ordered teeth for same day service); Tr. 4189, 4191 Cook (not aware of ever needing teeth on same day basis); Tr. 4277, 4208-82 O'Brien (need for same-day delivery "so small, it's not even worth discussion"); Tr. 4264-65, 4270-71 Murray (has emergency repair requiring same day Vita teeth just twice a year; cannot recall ever needing Ivoclar teeth same day); Tr. 4231-33, 4239-40 Keeling (less than 4% of denture cases each week require teeth same day); Tr. 4313-14 Wong (only once has a dentist requested same day delivery); Tr. 4293-94 Thayer (remembers one time when needed same day service from Dentsply).

one facility." (Tr. 504 Weinstock.) Practically all of Zahn's tooth customers receive teeth the day after they place the order. (Tr. 40, 504-06 Weinstock (only 10% same day).) Zahn is unable to provide most of the country with same day delivery. (Tr. 479, 481 Weinstock ("whole middle of the country" is not located near a local tooth stock).) Many labs purchase from Zahn, notwithstanding the inaccessibility of a local stock, because of the services Zahn provides. (Tr. 506 Weinstock.)

96. Tooth consignments placed in dental labs constitute a tooth stock from which labs can fulfill their daily tooth needs. (Tr. 488, 566-67 Weinstock.) Dentsply's rivals already offer tooth consignments to labs.

97. In "emergency" situations, when labs absolutely must have a tooth on a same-day basis, they sometimes choose to order their teeth from a dealer and pick those teeth up from a walk-up counter. (Tr. 4143 Nordhauser (if labs need teeth "that bad," they can pick them up); Tr. 1381 Kashfian (lab can pick up teeth in emergency situation if "so desperate").) The only example provided at trial of an emergency-type situation was the repair of a denture. (Tr. 3311 Coykendall; Tr. 3288 Langer; Tr. 4096 Dillon (same-day work more important with repairs).) Even in these situations, however, labs commonly find that they can repair dentures with the teeth that they keep in stock. (Tr. 3326 Coykendall; Tr. 2012 Jaslow (will order teeth only if not in stock).)

98. At least one lab testified at trial that repairing dentures is not a matter of "life and death" and that there are plenty of things a lab can do to satisfy the customer until the lab is able to obtain the proper tooth for the denture case. (Tr. 2014 Jaslow.) Langer Dental Laboratory simply will not guarantee same-day turnaround for a repair case. Instead, Langer will reschedule the case for the next day. (Tr. 3288 Langer.)

99. As a result, labs pick up teeth a very small percentage of the time. (Tr. 2772-73 DiBlasi (1/4 of 1%); Tr. 479-80, 539 Weinstock (10% of time in only 8 tooth

stock locations; need for same-day pick up has decreased since 1993); Tr. 3429 Nordhauser (walk-up business is “pretty minimal” compared to other delivery options.) Some labs deliberately choose not to pick up teeth from dealers because of the inconveniences involved in sending personnel to the dealer. (Tr. 3289 Langer (“it’s of no value” to pick up teeth from local dealer); Tr. 3322-23 Coykendall (Hopkins lab does not pick up teeth from Marcus Dental, located six miles away, obtains teeth from Marcus by mail instead).)

100. The agency identifies the handling of tooth returns as another “unique” dealer service. (Agency PFF ¶ 79.) Approximately 30% of all lab tooth purchases are returned for exchange/credit, either in full cards (for less popular SKUs) or partial cards called “broken sets” (where the lab fabricates a partial denture and does not use all the teeth on a particular card). (Tr. 2168 Jenson; Tr. 1298 Swartout; Tr. 81 Weinstock.) Although the terms of their respective policies vary, all manufacturers accept tooth returns. (Tr. 2167-68 Jenson, Tr. 1941-42 Pohl (Dentsply); Tr. 998 Ganley (Ivoclar); Tr. 1298 Swartout (Myerson);

It is clear from the record that labs value the ability to return teeth and that Dentsply’s rivals already perform that function and have done so during the entire relevant time period. (E.g., Tr. 2946 Mariacher.)

101. It is not necessary, or even standard practice, for dealer representatives to pick up tooth returns from individual labs. Zahn, Dentsply’s largest and most successful dealer, directs all its lab customers throughout the country to send their tooth returns to Zahn’s central processing facility. (Tr. 516-17 Weinstock; GX160 – “Terms of Sale” set out in Zahn 2002 catalogue require labs to send tooth returns to Zahn’s Tooth Returns Department in Mansfield, Massachusetts.) So, regardless of which one of Zahn’s tooth stocks labs purchase from, the “vast majority of the time” labs send their

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tooth returns to Massachusetts. (Tr. 517 Weinstock.) It "is more efficient" for Zahn to sort the returned teeth at one facility, using one department devoted to the task. (Tr. 517 Weinstock.)

102. The record is devoid of evidence supporting the agency's economic expert's opinion that labs need to be able to return all brands of teeth to a single vendor (*i.e.*, a single tooth dealer), rather than multiple vendors. (Tr. 1489 Reitman.) Dr. Reitman's opinion is contradicted by the evidence that labs do not purchase teeth from a single dealer, but rather use multiple dealers, including multiple Trubyte dealers.

103. The agency notes that dealers offer prompt, accurate and reliable delivery. (Agency PFF ¶¶ 74-75.) But direct-selling manufacturers deliver teeth using the exact same common carriers that Dentsply's Trubyte dealers use for delivery of teeth. Dentsply's main rivals currently offer overnight delivery on tooth orders. (Tr. 250 Whitehill (Vident ships overnight); Tr. 1099 Ganley (all Ivoclar orders shipped overnight); Tr. 1867-68 Becker (Heraeus ships teeth overnight); Tr. 4094 Dillon (deliver Enigma teeth overnight).) Moreover, Dentsply's rivals currently all have inventories of teeth from which to fill lab tooth orders. (Tr. 248-49 Whitehill; Tr. 1098-99 Ganley; Tr. 1292-93, 1343, 1351 Swartout.)

104. Lastly, the agency claims that dealers offer more sales representative coverage. (Agency PFF ¶ 85.) Direct selling manufacturers already employ sales representatives or commissioned sales agents.

3. Tooth Manufacturers Are Not Foreclosed From Selling Directly To Large Labs

105. There are approximately 500 large labs in the United States. These large labs purchase close to 25% of Trubyte's artificial teeth sales.

106. Throughout the 1990s, Dentsply organized a series of lab advisory meetings in order to enhance its understanding of the lab market and in particular the needs of large labs and lab groups.¹¹ (Tr. 2543 Clark.) The meetings allowed Trubyte the opportunity to share with the lab groups different program and product ideas, to hear feedback and input on those programs (Tr. 2529 Clark), and to improve and strengthen its relationship with the large labs (Tr. 2529 Clark; Tr. 2940 Mariacher).

107. As a result of the Lab Advisory Group meetings, Dentsply learned that the labs wanted Dentsply to provide additional cooperative marketing and rebate support. (Tr. 2533 Clark.) The labs expressed an interest in obtaining Trubyte teeth in Vita shades. (Tr. 2533 Clark.) Perhaps most importantly, Dentsply learned that the labs wanted Dentsply to sell teeth directly to the labs and not through dealers. (Tr. 2542-43 Clark.) According to the lab groups, dealers did not provide sufficient services to warrant their profit margin. Additionally, the labs viewed themselves as Dentsply's primary customers – not the dealer. The labs also believed they could purchase Trubyte teeth cheaper directly than through a dealer. (Tr. 2532-33 Clark; DX653 (summary of discussion points).)

108. Seven of the eight lab witnesses that testified at trial and fourteen of the remaining eighteen lab witnesses deposed in this case testified that they prefer to purchase teeth directly from manufacturers because of the cost savings over purchasing through dealers. (Tr. 2341, 2356-57 Armstrong; Tr. 2004 Jaslow; Tr. 2857 Challoner; Tr. 2957-58 Mariacher; Tr. 3280-81 Langer; Tr. 2731-33 Obst; Tr. 3328-29 Coykendall; Tr. 4277, 4279, 4281 O'Brien; Tr. 4213 R. Fox; Tr. 4257-58 Moyer; Tr. 4175-76 Boshoven; Tr. 4296-97 Thayer; Tr. 4314 Wong; Tr. 4232-33 Keeling; Tr. 4224-25 Hugo; Tr. 4246-

¹¹ Dentsply held a total of seven lab advisory meetings between 1993-1999. (Tr. 2543 Clark.) The meetings helped to solidify Dentsply's relationships with the labs. (Tr. 2543 Clark.)

47 Lantz; Tr. 4287 Peebles; Tr. 4266-67 Murray; Tr. 4304-05 Willits; Tr. 4190, 4193 Cook; Tr. 4219 Haynes; Tr. 4184-85 Colgin.)

109. Some labs prefer to buy direct to avoid dealer "error" (Tr. 2356-57 Armstrong) and "back orders" (Tr. 3280-81 Langer), while others appreciate the technical assistance manufacturers provide (Tr. 3280-81 Langer). Even if Ivoclar teeth were available from a dealer, Mr. Mariacher testified he would continue to buy direct from Ivoclar. (Tr. 2959 Mariacher.)¹²

110. Several of the lab attendees to these lab advisory meetings testified at trial: National Dentex, Dental Services Group (DSG), Lord's Dental Studio and Armstrong Dental Laboratory. (Tr. 2529-32 Clark; Tr. 2937-38 Mariacher; DX653.) Mr. Langer of Langer Dental Arts also testified that he attended lab advisory meetings in Newport Beach, California and Annapolis, Maryland. (Tr. 3274-76 Langer.)

111. National Dentex Corporation is a publicly-held company that owns and operates the largest chain of dental labs in the United States. National Dentex has 34 lab locations in 30 states. It employs 1,500 employees, and generates approximately \$100 million in revenue annually. (Tr. 2889 Mariacher.) All National Dentex labs employ at least 22 to 25 employees and have in excess of \$1 million in sales. (Tr. 2895-96 Mariacher.) They also all make dentures as well as crown and bridge restorations. (Tr. 2898 Mariacher.) In excess of 80% of National Dentex's total tooth purchases are Trubyte teeth. (Tr. 2936 Mariacher.)

¹² Morevoer, labs testified during the litigation that the availability of Vita and Ivoclar through local dealers would have no impact have no impact on labs' sales volume of those brands. See Tr. 4250-51, Lantz (if could receive a 10 percent discount on Ivoclar teeth through Zahn, purchases still would be dependent on dentist prescriptions); Tr. 4186 Colgin (would not be encouraged to use more Ivoclar and Vita teeth merely because available through Zahn); Tr. 4279-80 O'Brien (purchases of Vita and Ivoclar teeth through local dealer still would depend upon whether teeth were prescribed); Tr. 4269 Murray (wouldn't buy more Ivoclar teeth than are already being requested, even if carried by Patterson); Tr. 4258-59 Moyer (don't see any value to purchasing Ivoclar teeth through dealer; requests by dentists determine whether lab would purchase more Ivoclar teeth, not availability through dealer).

112. DSG or Dental Services Group owns and operates dental labs. DSG has 28 to 29 locations, servicing dentists in all 50 states.¹³ (Tr. 2710-11 Obst.) All DSG labs fabricate dentures. In 2001, DSG generated \$52.5 to \$53 million in revenue. Approximately 50% of DSG's revenue is attributable to removable dentures and partials. (Tr. 2713 Obst.) In the United States, DSG employs approximately 150 to 175 denture technicians. (Tr. 2713 Obst.)

113. Armstrong Dental Laboratory ("Armstrong Lab") is a full service dental lab located in Louisville, Kentucky. Armstrong Lab employs 37 to 38 dental technicians responsible for fabricating fixed and removable dental appliances. Thirty of these technicians only fabricate dentures. In 2001, Armstrong Lab's total sales were \$1.7 million; close to \$1.3 million in sales were attributable to dentures. Armstrong Lab fabricates about 300 dentures a week for approximately 500 denture customers. (Tr. 2329-32 Armstrong.)

114. Lord's Dental Studio is a full-service dental lab with locations in Green Bay and New Berlin, Wisconsin. During the time frame 1990-2000, Lord's Dental Studio employed approximately 25 to 27 dental technicians responsible for fabricating fixed and removable dental appliances. (Tr. 2824-27 Challoner.) As of 1998, Lord's Dental Studio's total revenue was approximately \$6.7 million. The denture business accounted for approximately \$1.7 million. In 2000-2001, Lord's total revenue was about \$9 million. (Tr. 2859 Challoner.)

115. Both Armstrong Laboratory and Lord's Dental Studio are members of TEREC. TEREC is an independent consortium comprised of 14 regional labs that

¹³ Affiliate Management Resources is an affiliate program of DSG that allows laboratories not owned by DSG to become affiliated with DSG. The affiliate labs may participate in DSG's purchasing programs for materials and take advantage of DSG's consulting services and training programs. Today there are approximately 75 affiliate labs located throughout the United States. Typically, a lab must generate about \$500,000 in sales to be considered an affiliate member. (Tr. 2714-15 Obst.)

exchange technical information, develop new products and share in joint marketing. (Tr. 2846-47, 2850-51 Challoner; Tr. 2351 Armstrong; DX1017.) In addition, TEREC functions as a buying group. (Tr. 2847 Challoner.) Mr. Challoner, who testified at trial, is a former two-year President of TEREC. (Tr. 2847 Challoner.) He also directed TEREC's Management Committee and served on TEREC's Task Force for purchasing teeth. (*Id.*)

116. The 90 or so individual labs affiliated with DSG, National Dentex, TEREC and Dental Arts Lab typically purchase large volumes of teeth and fabricate large volumes of dentures. (Tr. 2527-29 Clark.) Dr. Reitman conceded that Dentsply's rivals are not foreclosed from the preferred distribution channel for large labs. (Tr. 1649-50 Reitman.)¹⁴

¹⁴ The agency characterizes the lab trial witnesses as large labs that Dentsply "hand picked to testify." (Agency PFF ¶ 136.) The evidentiary record is not limited to witnesses that testified live at trial. Accordingly, Dentsply cites herein relies upon the testimony, of depositions of representatives of labs of all sizes. *See* Tr. 4223 Hugo (in-house lab of Dr. Wallace – one denture tech); Tr. 4330-31 Watkins (Functional Esthetics – 1 to 2 denture techs); Tr. 4227-28 Keeling (Progressive Prosthetics – 3 denture techs); Tr. 4275 O'Brien (O'Brien Dental Lab – 3 denture techs); Tr. 4266 Murray (Acrylic Works Dental Lab – 5 denture techs); Tr. 4210 R. Fox (Fox Dental Lab – 4 denture techs and 5 partial techs); Tr. 4259-60 Murphy (Saylor's Dental Lab – 5 denture techs and 2 partial techs); Tr. 4290 Thayer (Thayer Dental Lab – 6 denture techs); Tr. 4318 Baca (Gnathodontics – 8 denture techs); Tr. 4245-46 Lantz (Lantz Dental Prosthetics – 8 denture techs and 2 partial techs); Tr. 4283 Peebles (Peebles Prosthetics – 10 denture techs); Tr. 4217 Haynes (Pittman Dental Lab – 10 denture techs); Tr. 4303-04 Willits (Lab One – 10 denture techs and 5 partial techs); Tr. 4253 Moyer (Associated Dental Technicians – approx. 10 denture techs and Tr. 4172-74 Boshoven (Davis Lab – 13 denture techs and 11 partial techs); Tr. 4308 Wong (Americus Dental Group – 16 denture techs); Tr. 4188 Cook (Oral Arts Dental Lab – 3 branches and 17 denture techs); Tr. 4324-25 Popp (Popp Dental Lab – 25 techs for both denture and crown and bridge); Tr. 4180-81 Colgin (Dental Arts Lab – over 10 locations and 70 denture techs); Tr. 4195 Fichter (Glidewell Labs – over 100 denture techs).

4. Ivoclar And Vident Have Made Business Decisions To Sell Directly To Labs

a. Ivoclar

117. Ivoclar concedes that selling directly to dental labs is an effective method of distribution that provides Ivoclar with "some advantages" versus dealer distribution. (Tr. 1006-07, 1119-20 Ganley.)

118. All of the dental lab owners who testified at trial purchase artificial teeth directly from Ivoclar and stated that they prefer this method. (Tr. 3319-20, 3325 Coykendall (Ivoclar provides overnight delivery and has met needs of Hopkins Dental Lab for 17 years); Tr. 2913, 2959 Mariacher ("not a problem" to purchase direct from Ivoclar; would continue to purchase Ivoclar teeth directly even if available from a dealer because of favorable pricing); Tr. 1234 Ryan (Ivoclar offers convenient shipping options); Tr. 2344 Armstrong ("satisfied" with direct relationship with Ivoclar).)

119. The agency argues that Ivoclar's primary difficulty in selling teeth in the United States has been its lack of access to dealers. (Agency PFF ¶ 155.) The agency claims Ivoclar has tried several strategies to overcome this difficulty, including an attempt to authorize Frink as a dealer in the late 1980s. But, as the trial record shows, on two brief occasions during the period 1988 through 1995, Ivoclar experimented with dealer wholesale distribution. (Tr. 1030, 1060-73 Ganley.) In each instance, Ivoclar determined that it was better off selling directly to dental labs.

120. In November 1988, Ivoclar approached Frink Dental Supply, a large dental dealer located in Chicago, to carry its teeth. (Tr. 1031 Ganley.) Frink already was a distributor of Ivoclar's Vivadent product line in the same area. (Tr. 992-93 Ganley.) Ivoclar appointed Frink to determine the effectiveness of a dealer distribution model for the Ivoclar artificial tooth line. (DX10 at 5 ("[e]stablish a program to determine

profitability of supply house distribution"); DX15 ("a time will come when we will have to assess whether Frink and the dealer network in general, is the way to go");

; Tr. 1051-52 Ganley ("We established a measurement point in the future to determine the effectiveness of it").) Ivoclar planned to complete its study of the effectiveness of dealer distribution by mid-year 1990. Tr. 1052 Ganley.) Ivoclar's arrangement with Frink was exclusive. (Tr. 996 Ganley.)

121. At the time, Ivoclar was selling its teeth to labs at one price. Contemporaneously with its appointment of Frink as a tooth distributor, Ivoclar "instituted a price increase" across all of its tooth lines. Tr. 1032 Ganley.) Ivoclar recognized that it would need to share its profit margin with Frink and, thus, in order to maintain profitability, Ivoclar needed to increase its prices for artificial teeth. (Tr. 1032-34 Ganley;

Ivoclar also expected Frink to increase Ivoclar's tooth revenue by converting labs then buying Dentsply artificial teeth with Frink to Ivoclar. The minutes of Ivoclar's North American Management Board meeting attest that Ivoclar's express objective with Frink was to "transfer the Dentsply customer base to Ivoclar." (DX10 at 4, ¶ 16; Tr. 1033-36 Ganley.)

122. On January 26, 1989, Ivoclar representatives met with Tom Cavanagh, President of Frink Dental, to discuss Mr. Cavanagh's concerns regarding Frink's agreement with Ivoclar. (DX9 at 1; Tr. 1039-40 Ganley.) Mr. Cavanagh was concerned that promises made three months earlier (when Ivoclar appointed Frink) by Mr. Kevin Dillon, President of Ivoclar NA at the time, would not be honored now that Mr. Dillon had left Ivoclar. (DX9 at 1; Tr. 1040 Ganley.)

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123. Ivoclar had made a number of promises to Mr. Cavanagh in order to commit Frink to taking on the Ivoclar line of teeth. Ivoclar had promised Frink that Ivoclar would, among other things: (1) advertise heavily and include the Frink name and telephone numbers in a byline in the advertisements; (2) provide Frink with various advertising and promotional materials; (3) send 20 Williams¹⁵ and Ivoclar sales representatives to Frink's tri-state area to support the promotion of Ivoclar teeth; (4) hire a technical representative for the Chicago area; (5) provide free unlimited shade guides; (6) invite Frink's sales force to Liechtenstein for one week if Ivoclar sales in the first year exceeded \$1 million; (7) provide a battery-powered hand piece for demonstrating the grinding qualities of Ivoclar teeth; (8) expand Ivoclar's dealer network through other regional dealers; (9) offer clinics and seminars; (10) pay legal fees relating to Frink's investigation of "the Dentsply antitrust situation"; (11) pay for local and regional advertisements; and (12) guarantee payment if a customer's credit failed. (DX9 at 1-3.) Ivoclar believed it was necessary to make these commitments in order to help Frink build and promote Ivoclar's artificial tooth business. (Tr. 1041 Ganley; DX9.) Ivoclar recognized that Ivoclar lacked a "number of soldiers to implement all these measures." (DX15.) Mr. Ganley shared that view and attributed Ivoclar's problem to a lack of a sales organization dedicated to artificial teeth. (Tr. 1047-48 Ganley;

124.

Nevertheless, after the January 1989 meeting, Ivoclar refused to commit expressly to Frink that it would provide the requested support. (DX9 at 3; Tr. 1042 Ganley.) At trial, Mr. Ganley could not recall whether many of the items, in fact, were implemented. (Tr. 1042-44 Ganley.)

¹⁵ Ivoclar purchased the Williams Gold Refining Company ("Williams") in 1996. (Tr. 4347 Segnere; Tr. 1172 Raths.)

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125. In July 1989, Ivoclar commissioned a task force to establish a strategic marketing plan for its denture products. (Tr. 1026-27 Ganley.) The task force found that Ivoclar and had taken a "regressive" position in the U.S. marketplace due to the lack of a General Manager and sales representatives in the field. (Tr. 1027 Ganley.) In fact,

126. The task force also found that

Ivoclar concedes that Frink never generated the tooth volume necessary to offset the lost profitability. (Tr. 1050-51 Ganley.) Consequently, Frink returned to selling Dentsply teeth in an effort to recoup its former profits. (Tr. 1051 Ganley; Tr. 4364, 4369-70 Cavanagh (Frink determined "it would be best to stay with Dentsply"; driving factor to return to Dentsply was access to Trubyte tooth line).)

127. In 1995, Ivoclar had a business relationship with Dental Technician's Supply ("DTS"). (Tr. 3385 Underwood.) DTS, at the time, did not carry Trubyte teeth. (*Id.* at 3397-98.)

128. Prior to its acquisition by Darby Dental Supply in 1998, DTS was a dental products dealer with locations in New York, Kansas City, Denver and Orlando. DTS sold dental products primarily to dental labs. (Tr. 3377-80 Underwood.) In 1992, DTS agreed to distribute Ivoclar dental products, including artificial teeth and crown and bridge products. (Tr. 3380 Underwood.) Under this agreement, Ivoclar provided a consignment of its products to DTS. (Tr. 1070 Ganley; Tr. 3383 Underwood.) In turn,

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DTS agreed to distribute the Ivoclar products to dental labs out of the DTS locations. (Tr. 3382-83 Underwood.) Ivoclar billed the dental labs for the products. (Tr. 1070 Ganley.) Ivoclar paid DTS a 10% commission on the sale of Ivoclar products. At the time, dealers typically earned a 35% standard margin on their sales of teeth to dental labs. DTS therefore made less money as Ivoclar's agent than it would have as a dealer of Ivoclar products. (GX19 at 24599; Tr. 1066 Ganley; Tr. 3383-84 Underwood; Tr. 2221 Jenson.)

129. Ultimately, the business relationship between DTS and Ivoclar deteriorated and ended by the mid-1990s. (Tr. 3388-98 Underwood; DX272.) Tom Underwood, President of DTS of Kansas City, testified that DTS began to consider ending the relationship when the chance that Ivoclar would buy DTS, one of Mr. Underwood's objectives, became remote. (Tr. 3387-88 Underwood.) Also, Ivoclar was displeased that DTS would not switch customers from the competitive Argent alloy line to Ivoclar alloys and had not devoted the substantial time necessary to promoting Ivoclar's Empress crown and bridge product line. (Tr. 3391-93, 3395-96 Underwood.) Ivoclar also expressed a desire to "more closely monitor inventory levels of their products" by shipping "everything from a single point" - their headquarters in Buffalo, N.Y. (DX272; Tr. 3390 Underwood.)

130. DTS was the only non-Trubyte dealer that Ivoclar contacted regarding the distribution of its artificial teeth between 1990 and 2002. (Tr. 1058 Ganley.) Ivoclar has consistently chosen direct distribution and rejected dental dealers who expressed interest in carrying Ivoclar teeth. Ivoclar concluded as early as 1989 that "dealers do not really provide sales support, but only act as a distribution center and service to tooth stocks." (Tr. 1031 Ganley;)

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131. In 1990, less than a year following the Frink experiment, Darby Dental Supply sought to become an Ivoclar dealer. Darby proposed adding four distribution points to the stocking locations that Ivoclar already had at the time. These points were located in New York, Boca Raton, Dallas and Chicago. In its analysis of Darby's proposal, Ivoclar determined that it was more profitable to sell directly to dental labs.

(Tr. 1101-03 Ganley; It further determined that distribution through dealers was an "expensive alternative" to direct sales. (Tr. 1102 Ganley;

By selling directly to the customer, Ivoclar concluded that it would "guarantee continuity and distribution methods." (Tr. 1103 Ganley;

Consequently, Ivoclar rejected this proposal and chose instead to continue with direct distribution. (; 1061-65, 1103 Ganley (Ivoclar "turned Darby down").)

b. Vident

132. In 1997, Vident analyzed the feasibility of adding a large dealer, specifically Patterson, as a sub-dealer.

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5. From 1987 Through 2000, Dentsply And Vita Are The Only Tooth Manufacturers That Distribute Their Teeth Exclusively Through Tooth Dealers

a. Dentsply

(1) Dentsply's Non-Contractual Dealer Relationships

134. During the early to mid 1990s, Trubyte sold artificial teeth through 35 to 40 dealers. Some of these dealers had one location, while others had multiple locations. (Tr. 2576-77 Clark.) Today there are 23 authorized Trubyte tooth dealers. (Tr. 2178-79 Jenson;

135. Dentsply does not have a contractual arrangement with its authorized tooth dealers. (Tr. 1184-85 Hagler (there is "no contract with [Dentsply] to continue to purchase" teeth; dealers can drop Dentsply at any time); Tr. 2585, 2631 Clark ("if a dealer is authorized to sell Trubyte teeth, it does not sign a contract; agreed that "a Trubyte dealer can take on a competitive tooth line if they want to").) If Dentsply's dealers do decide to take on the teeth of a rival, they can either sell their Dentsply tooth inventory or send it back to Dentsply for full credit. (Tr. 700 Cavanagh ("I was told that I could return [the teeth] for full credit"); Tr. 4346 Hagler ("Dentsply will accept Darby's inventory of Dentsply teeth for credit").) Even the agency's expert, Dr. Reitman,

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concedes that Dentsply does not use any "long-term contracts" with its dealers. (Tr. 1515, 1597 Reitman.).

136. There is no dispute that when Dentsply authorizes a dealer to carry its teeth, that relationship operates on a purchase order basis. Thus, an authorized Trubyte dealer is free to stop buying Dentsply teeth at any time without penalty from Dentsply. (Tr. 2585 Clark; Tr. 1184 Raths.) The agency's first trial witness, Norman Weinstock – the President of Zahn Dental, Dentsply's largest tooth dealer – acknowledged that Zahn could "stop selling Trubyte teeth altogether ... tomorrow." (Tr. 543 Weinstock.) He agreed that "[i]t's not any contract or anything" that is stopping Zahn from sending Trubyte teeth back to Dentsply, but rather a decision that he has made "in the best interests" of Zahn. (*Id.*)

137. Dentsply's Trubyte Division always has distributed artificial teeth through a limited number of dental dealers. (Tr. 2178-79 Jenson; Tr. 3441-42 Miles.) Trubyte does not use more dealers than it needs to distribute teeth effectively. Otherwise, dealers would lose the value of their investment and wind up dividing the artificial tooth market among themselves rather than growing the market. (Tr. 2580 Clark.) This is why, for example, Trubyte did not recognize AccuBite Dental Supply as an authorized Trubyte tooth dealer in the early 1990s in Michigan, where Trubyte already had adequate dealer distribution, including HealthCo, Meer and Professional Dental. (Tr. 2412-19 DeSautel.) AccuBite applied at least three times to become a Trubyte tooth dealer during this time period. (Tr. 2411, 2415-16 DeSautel; *see, e.g.*, DX65-B (Dentsply letter denying application of AccuBite).) Only after Professional Dental went bankrupt and Healthco experienced financial difficulties in the early 1990s did Trubyte authorize AccuBite to sell artificial teeth. (Tr. 2418-19 DeSautel; DX76.)

138. During the early to mid-1990s, HealthCo's bankruptcy significantly affected the composition of Dentsply's dealer network. Beginning in approximately 1992, HealthCo began having serious financial problems, and ultimately filed for bankruptcy in 1993. (Tr. 109 Weinstock; GX44; Tr. 2830-31 Challoner.) HealthCo operated as the "largest dental dealer in the United States" and served as "the major supplier" of dental lab products. (Tr. 1793 Ackeret; Tr. 109 Weinstock.) It distributed teeth from roughly 50 tooth departments across the United States. (Tr. 111 Weinstock.) HealthCo's closing eliminated all these tooth outlets. (GX44.)

139. Dentsply believed that existing demand for Trubyte teeth would be lost to competitive tooth lines if it failed to add new dealers during this period. (GX44.) As a result, an opportunity existed for new dealers of Trubyte teeth to fill the "strategic void" HealthCo's bankruptcy created. (GX 44; Tr. 539 Weinstock.) J&S Dental Supply, Technical Dental Services (TDS) in Maine, DTS, and Jan Dental Supply all became Trubyte tooth dealers during this period. (GX44 (J&S Dental authorized as dealer to fill void left by HealthCo closing); Tr. 539 Weinstock; Tr. 1174-75 Raths (believed HealthCo's closing connected to DTS becoming Trubyte dealer); Tr. 1909-10 Pohl).)

140. Dr. Reitman opined that despite not having long-term contracts, Trubyte dealers are locked-in to Dentsply because they have to make an "all-or-nothing choice" to take on a rival brand. (Tr. 1514 Reitman.) According to Dr. Reitman, Trubyte dealers' decisions to continue to distribute Dentsply's teeth are "driven by the high share of Dentsply in the marketplace." (Tr. 1514 Reitman.) Dr. Reitman argues that no dealer can "justify leaving aside the revenues they get from being part of this very large Dentsply tooth business to a brand of tooth which is a much smaller share of the market." (Tr. 1514-15 Reitman.) Dr. Reitman also opined that dealers must be big, *i.e.*, have economies of scale, to effectively compete in the market. (Tr. 1512 Reitman.) DX1674 refutes Dr. Reitman's opinions. (Tr. 3621 Marvel.)

141. DX1674 is a summary based on Dentsply's zip to ship data prepared and maintained in the ordinary course of business. (Tr. 3619-20 Marvel.) It sets out by state each Trubyte dealer with sales of Trubyte teeth into that state and the percentage share that those sales represent of all Trubyte tooth sales into that particular state. For example, in California JB Dental Trubyte tooth sales represent only _____ of all Trubyte sales in California. If Vident or Ivoclar offered JB Dental an exclusive for California, JB could drop Dentsply and take on Vita and Ivoclar with the result being trading _____ of Trubyte sales in California for approximately a collective 8% share of all artificial teeth sold in California (a level that equates to Vident's and Ivoclar's combined estimated market shares). (Tr. 1621-22 Reitman.) The inducement increases with each rival that is added. (Tr. 1621-28 Reitman.) Further, there are similar opportunities in every state. (*Id.*)

142.

143.

Mr. Clark authored and submitted the Long Range Plan to Dentsply's senior management in Spring 1996. (Tr. 2592 Clark;

144.

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145.

146.

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147.

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152. The agency asserts that without dealer criterion 6, Dentsply would lose market share. (Agency PFF ¶ 266.)

153. The agency asserts that "Dentsply itself does not know whether direct sales are cheaper." (Agency PFF ¶ 136.)

154.

Dentsply's concern reflects the experience of other manufacturers that have distributed one product through dealers and competed against those dealers with another product. Kevin Dillon, president of Leach & Dillon, testified that, based on his prior experiences, he faced this exact concern in selling Enigma teeth directly. (Tr. 4092-93 Dillon.)

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155.

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161.

162. Dentsply's largest dealer – Zahn Dental – has for years recognized the possibility of Trubyte taking its business direct. (Tr. 554 Weinstock.) Several times Zahn and the Henry Schein Company have asked for assurances from Dentsply's senior management that it would not take the business direct. (Tr. 555-57 Weinstock; DX1590 (response from John Miles to Henry Schein regarding a change in distribution).) “[E]ven today” Zahn recognizes the “possibility” that Dentsply might take the tooth business direct. (Tr. 557, 559 Weinstock; *see also* Tr. 3826-27 Wiltz (Patterson “believe[s] that Dentsply could go direct”).) That is because dealers like Zahn consider direct selling manufacturers as competitors. (Tr. 553 Weinstock.)

Patterson would not even consider adding another premium line unless the brand had at least a 10% market share. (Tr. 3834 Wiltz.)

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163.

164.

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b. **Vita**

(1) **Vita Zahnfabrik**

165. Vita Zahnfabrik has distributed its teeth exclusively through a national dealer since at least 1968 by way of a contractual arrangement – first with Unitech from 1963-1984 and then Vident since 1984. (Tr. 289-93 Whitehill.) In its contract with Vident, Vita committed that it will not appoint any other distributor for Vita artificial teeth in the United States. (Tr. 290-91 Whitehill.) Consequently, during the entire relevant time period, Vita has been contractually prohibited from selling its teeth in the United States through any distributor besides Vident.¹⁶ In consideration for this commitment, Vident agreed that it would not distribute any products that compete with Vita products. (Tr. 291 Whitehill.)

166. Vident's President considers the exclusivity agreement Vident has with Vita beneficial because it permits Vident's sales representatives to focus completely on the Vita line of products. (Tr. 291-92 Whitehill.)

(2) **Vident**

167. Vident carries a large inventory of Vita teeth. (Tr. 329 Whitehill.) Vident sells and distributes artificial teeth directly to dental labs from its Brea, California location. (Tr. 241-42, 248, 254, 288, 375-76 Whitehill; Tr. 3361-62 Clavelli (Vident sells

¹⁶ The agency, in their post-trial papers, attempts to depict Vident as an "importer" of Vita teeth. However, the word "importer" appears just once in the 4162 page trial transcript, not to describe the relationship of Vident and Vita, but rather the relationship of the Dillon Company and Schottlander. (Tr. 4088 Dillon (Dillon Company is "exclusive importer" of Enigma teeth).) The agency's characterization contradicts the testimony of Wayne Whitehill, Vident's President. Mr. Whitehill testified that his company was a "national distributor" for Vita teeth in the United States. (Tr. 294 Whitehill.) He said that Vident would not correctly be characterized as a tooth manufacturer on GX356. (Tr. 286-87 Whitehill.)

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direct.) Vident offers overnight delivery from this single stock. (Tr. 329, 376 Whitehill). Like other dealers, Vident has a "long-standing relationship" with dental labs. (Tr. 342 Whitehill.) Vident's tooth sales have increased every year since it became the exclusive Vita distributor for the United States. (Tr. 250 Whitehill.)

168. Vident sells artificial teeth through a knowledgeable sales force of people and a telemarketing department whose responsibilities include Vita teeth. (Tr. 229-30, 296-98, 328 Whitehill.)

169. Vident also consigns teeth to dental labs. (Tr. 253, 346 Whitehill.) Armstrong Dental Labs had a consignment of Vita teeth for 8-10 years. (Tr. 2334, 2336 Armstrong.) Langer Dental Arts had a consignment of Vita teeth. (Tr. 3259 Langer.) Jaslow Dental Lab also had a consignment of Vita teeth, until Vident pulled the consignment from Jaslow. (Tr. 1990 Jaslow.) Sonshine Dental Laboratory currently has a consignment of Vita teeth that it acquired through Bego. (Tr. 1241-42 Ryan; DX1118.)

170. Vident differs from other tooth distributors in that Vident has appointed a number of sub-distributors, in effect creating a network of sub-dealers. (Tr. 302-03 Whitehill.) These firms purchase Vita teeth through Vident at prices established by Vident. (Tr. 327 Whitehill.) None are permitted to buy teeth directly from Vita. (Tr. 302 Whitehill.) According to Vident's President, Wayne Whitehill, this network currently encompasses 18 sub-dealers each with its own inventory of Vita teeth. (Tr. 303 Whitehill.) From 1985 until 1990 Vident did not utilize sub-dealers. (Tr. 301-02 Whitehill.)

171.

These sub-dealers encounter direct competition from Vident for the sale of Vita artificial teeth.

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(Tr. 247, Whitehill.) Vident has a reputation for taking its sub-dealers' customers, and selling to them directly. (Tr. 4089-90 Dillon (if "Vident find[s] out a dealer has a customer that's buying a lot of teeth, they will go back-door and take the customer direct".) By doing so, Vident effectively has precluded its sub-dealers from selling to certain large labs, such as Dental Services Group. (DX508 at 19/3.) Mr. Whitehill admitted in his testimony that this hybrid distribution system

see also Tr. 3467 Miles.)

172. The geographic distribution of Vident, its sub-dealers and their respective tooth stocks closely mirrors the tooth distribution locations of Zahn Dental Supply. (Tr. 328-332 Whitehill; DX1588.) In fact, Mr. Whitehill of Vident testified that Vident is just like Zahn in a lot of ways: both sell teeth to dental labs through a sales force; Vident sells teeth through its telemarketing division; both Vident and Zahn distribute catalogs to dental labs promoting teeth; both carry large inventories of teeth; and both offer overnight delivery of teeth. (Tr. 328-330 Whitehill). Mr. Weinstock of Zahn agreed with the comparison. Like Zahn, Vident is a distributor – not a manufacturer – of teeth; both Zahn and Vident purchase from a manufacturer and sell to somebody else. (Tr. 524 Weinstock.)¹⁷ Additionally, both Zahn and Vident do not sell precious metals; thus a lab that needed to purchase teeth and precious metals could not purchase both products from either Zahn or Vident. (Tr. 524-25 Weinstock.)

173. Vident has expressed a desire

¹⁷ Notably, Mr. Whitehill unequivocally stated that Vident is not a tooth manufacturer, and therefore would not be part of the tooth manufacturer component of GX356, the agency's flow chart that attempted to describe tooth distribution within the United States. (Tr. 288 Whitehill.)

c. **Dentsply's Other Rivals**

(1) **Schottlander**

174. Since it entered the United States tooth market in 2001, Schottlander has distributed its Enigma artificial teeth in the United States through Dillon Company, Inc. ("Dillon" or "Leach and Dillon"), a Rhode Islander manufacturer and distributor of dental lab products. (Tr. 4079-80, 4084-85, 4088 Dillon.) Prior to entry, Schottlander and Dillon attempted to gain distribution for Enigma teeth through Trubyte dealers, but were unsuccessful. Schottlander decided to enter the market, nonetheless, with Dillon as its exclusive importer and distributor. (Tr. 4080-81, 4085-86 Dillon.)

175. As Schottlander's national distributor, Dillon sells and promotes Enigma artificial teeth directly to dental labs. (Tr. 4090-92 Dillon.) Dillon also provides consignments of Enigma teeth to dental labs. (Tr. 4090 Dillon.) Offering labs consignments is an effective way to market teeth to dental labs, according to Kevin Dillon of Leach and Dillon. (Tr. 4090 Dillon.) Leach and Dillon uses consignments to compete effectively against Dentsply. For instance, Leach and Dillon used a consignment to displace Trubyte teeth that Zahn placed with Yankee Dental Lab. (Tr. 4087-88, 4090-91 Dillon.)

176. Additionally, Lincoln Dental Supply takes orders for the Enigma teeth and has them drop-shipped from Leach and Dillon to the end-user lab. (Tr. 2785 DiBlasi.) Lincoln's sales of Enigma teeth have doubled over the past two years. Lincoln estimates that its sales for Enigma teeth will increase by 25%-30% in 2002. (Tr. 2788

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DiBlasi.) Leach and Dillon expects to grow sales of Enigma teeth by close to seven times by year-end. (Tr. 4094-96 Dillon.)

**(2) Austenal/Myerson LLC, American
Tooth Industries, and Universal**

177. These manufacturers all use dental dealers in addition to their respective direct sales. Some of Trubyte's largest dealers, Zahn Dental, Patterson Dental Supply, DLDS, Hendon Dental Supply, Pearson Dental Supply, Atlanta Dental and Thompson Dental Supply, all carry these brands. (Tr. 1343-44 Swartout; Tr. 620, 622, 625 Harris; Tr. 1413, 1420 Vetrano; DX1599; GX160 (Zahn markets and promotes these lines alongside Trubyte artificial teeth in its dental catalog).) Universal has over 100 dealers. (Tr. 4343-44 Burkhardt.) There is no evidence that Austenal/Myerson, Universal, or ATI ever have competed for the business of Trubyte dealers that do not distribute their teeth by, for instance, offering price discounts, increased profit margin, or enhanced co-marketing support. There similarly is no evidence that these manufacturers have engaged in any unsuccessful efforts to recruit new, non-Trubyte dealers.

**C. The Number Of Dealers That Carried Artificial Teeth
During The Relevant Time Period Does Not Define The
Universe Of All Dealers Capable Of And Interested In
Carrying Artificial Teeth**

**1. There Are Hundreds Of Dealers Available To
Dentsply's Rivals**

178. There are hundreds of dental dealers in the United States. (Tr. 1313 Swartout (Proof's directory has hundreds of local, regional and national dealers); Tr. 2404 DeSautel.) Many of these dealers want to add artificial teeth as a product line. (Tr. 2581-82 Clark; Tr. 2190 Jenson; Tr. 2776-77 DiBlasi; Tr. 3343-44 Clavelli.) Most of these dealers are merchandise dealers seeking to add a tooth line. (See, e.g., DX111

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(Alamo City Dental Supply Co.); DX1607 (composite exhibit of Blue Ribbon Dental (DX997), Thompson Dental Lab Supply Inc. (DX943), Lee Dental Supply (DX931), Unique Dental Supply (DX823), Shamrock Dental Supply (DX814) and Health Wealth Dental Supply (DX769).) The merchandise dealers that the agency called at trial all testified that, given an adequate incentive and demand, they would be interested in teeth. (Tr. 3844 Shernowitz; Tr. 3847 Dhuet; Tr. 3864 Warren.)

179. Dentsply has rejected hundreds of dealer applicants requesting to become authorized Trubyte tooth dealers during the relevant time period. (Tr. 2581-82 Clark.) When Mr. Pohl served as National Sales Manager from 1992-1994, he received one or two requests monthly to become Trubyte tooth dealers. (Tr. 1900 Pohl.) During Mr. Clark's tenure at Trubyte as Director of Sales and Marketing, 1992-1996, and then as Vice President and General Manager, 1996-1998, he received at least one such inquiry each month. (Tr. 2581-82 Clark.) Steve Jenson, Trubyte's current Vice President and General Manager, testified that when he took over for Mr. Clark in 1997, he received 4-6 requests monthly. Today, according to Mr. Jenson, Trubyte receives 1-2 requests each month from dental distributors seeking to become an authorized Trubyte dealer. (Tr. 2190 Jenson; *see, e.g.*, DX1607; DX1202, DX1204 (Holt Dental Supply).)

180. There are no geographic or technological barriers that limit available dealers to particular areas in the country. (Tr. 2189 Jenson (most Dentsply dealers sell nationwide).) Dealers today have the capability to serve broad geographic areas. Each dealer that testified at trial and in depositions on this issue demonstrated the capability and willingness to ship teeth anywhere in the United States. (Tr. 2773-74 DiBlasi; Tr. 2429-30 DeSautel; Tr. 2061-62 Silcox; Tr. 104-05, 481, 504 Weinstock; Tr. 641-42 Harris; Tr. 1170-71 Raths; Tr. 1429-30, 1438-39 Vetrano.)

181. For example, Jeff DiBlasi, Vice President and Sales Manager of Lincoln Dental Supply, testified that Lincoln is a national, full service dental lab supply house headquartered in Cherry Hill, New Jersey. (Tr. 2756, 2758, 2762 DiBlasi.) Lincoln sells merchandise, equipment and artificial teeth. (Tr. 2758 DiBlasi.) Lincoln employs 35 people, 16 of whom call on accounts to sell products. (Tr. 2762 DiBlasi.) In 2000, Lincoln's total sales in dollars exceeded \$9 million. In 2001, Lincoln's sales exceeded \$10 million. Lincoln projects its sales to exceed \$12 million in 2002. (Tr. 2759-60 DiBlasi.) Lincoln's customers are primarily dental labs, dentists with in-house labs and denturists.¹⁸ (Tr. 2761 DiBlasi.) Lincoln generates demand through its sales representatives, catalogue and sales flyers. (Tr. 2764-67 DiBlasi; DX1612, DX1613.)

182. Lincoln currently distributes two lines of economy artificial teeth – the New Shade Plus and Dual Form V-Line. It also sells the Enigma line of teeth. It has distributed artificial teeth for over 20 years and finds the sale of teeth profitable. Lincoln has about 400 tooth accounts located throughout the United States. (Tr. 2773 DiBlasi.) Lincoln's customers for teeth are full service dental labs, denture centers and partial denture labs. (Tr. 2768-69 DiBlasi.) In 2001, Lincoln sold approximately \$800,000 worth of teeth, accounting for approximately 8%-10% of its total sales. According to Mr. DiBlasi, Lincoln's tooth sales are growing. (Tr. 2768-69 DiBlasi.) Lincoln started selling the Enigma line of teeth around 2000. Lincoln has approximately 50 customers for Enigma teeth located throughout the United States. (Tr. 2787 DiBlasi.) Leach and Dillon is Schottlander's exclusive United States distributor for Enigma teeth; Lincoln forwards orders for the teeth to Leach and Dillon which drop-ships the teeth to the lab. (Tr. 2767-68, 2785 DiBlasi.)

¹⁸ A denturist performs the work of both a laboratory and a dentist. (Tr. 2761 DiBlasi.)

183. According to Mr. DiBlasi's uncontested testimony, Lincoln is capable and available to sell other lines of artificial teeth, including premium lines of teeth. (Tr. 2775-76 DiBlasi.) Lincoln already sells its products to high-end labs. It is equipped to sell premium teeth to these customers as well. (Tr. 2775-76 DiBlasi.) Lincoln wants to expand its tooth offerings, with particular interest in Trubyte and Vita teeth. (Tr. 2776-77 DiBlasi.) Dentsply has not authorized Lincoln because Lincoln has not demonstrated that it can provide Dentsply with incremental business. (Tr. 2777 DiBlasi.) Mr. DiBlasi testified that he nearly reached an agreement with Vident to become a Vita sub-dealer, but backed out when Vident demanded that Lincoln accept a 20% net margin on teeth, rather than the standard 30%-35% margin that tooth dealers receive. (Tr. 2782-83 DiBlasi (Lincoln looks for a minimum 30% gross margin on teeth).) Vident's President gave no explanation for this demand during his testimony. (Tr. 268-69 Whitehill.)

184. Jack Silcox, Ltd. is one of "hundreds of small statewide dealers" available to sell artificial teeth. (Tr. 2045 Silcox; Tr. 1810 Ackeret.) Mr. Silcox testified at trial. Jack Silcox, Ltd. distributes artificial teeth, among other products, to dental labs and to dentists with in-house labs from its location in Central Ohio. (Tr. 2045-46 Silcox.) Jack Silcox, Ltd. has about 700 active and semi-active dental lab customers. (Tr. 2044-47 Silcox.) Most customers are located in Ohio, but Jack Silcox, Ltd. sells to customers located throughout the United States. (Tr. 2059 Silcox.)

185. Jack Silcox, Ltd. began selling artificial teeth in the 1990s when American Tooth Industries offered it a consignment of Justi teeth. It has been selling artificial teeth ever since and has found it to be profitable. Jack Silcox, Ltd. currently distributes Justi, Dentorium, Coral and Universal teeth. (Tr. 2048-50 Silcox.) Mr. Silcox testified that he was in discussion with Vident in 1996-97 to become a sub-dealer of Vita teeth. (Tr. 2064 Silcox.) According to Mr. Silcox, an important part of that discussion

was a commitment by Vident that it would not undersell Jack Silcox, Ltd. on Vita teeth. Mr. Silcox ended the discussion when he learned that contrary to Vident's commitment, a lab account was buying Vita teeth from Vident and at a price lower than Jack Silcox, Ltd. would have had to pay Vident for the same teeth. (Tr. 2062-64 Silcox.)¹⁹

2. Operatory Dealers Have The Potential To Become Tooth Dealers

186. The agency claims that operatory dealers are not potential channels for the sale of teeth. (Agency PFF ¶ 256.) Conveniently, the agency defines "operatory dealer" in two ways: (1) dealers that sell to operatories or dentists, whether or not they also sell to dental labs; and (2) dealers that sell only to dentists. (Agency PFF ¶ 249.)

187. Under the agency's first definition of operatory dealer, the evidence admitted at trial absolutely showed that this type of dealer can and does sell artificial teeth. The vast majority of Trubyte tooth dealers are operatory dealers. The top five Trubyte tooth dealers in terms of revenue are operatory dealers and carry competitive teeth. (Tr. 2186 Jenson.) Of Trubyte's current 23 authorized tooth dealers, 18 are operatory dealers including: Henry Schein (parent of Zahn Dental Company); Patterson Dental Company; Darby Dental; Benco Dental Supply; J.B. Dental Supply Company; AccuBite Dental Supply Inc.; Arnold Dental Supply; Atlanta Dental Supply; Nashville Dental Inc.; Nowak Dental Supplies Inc.; Mohawk Dental Supply; Iowa Dental Supply Company Inc.; Burkhardt Dental Supply Company; T.M. Crutcher Dental Inc.; Midway Dental Supply Company; Dental Supplies and Equipment; Goetze Neimer Company; and A. Leventhal & Sons Inc. (Tr. 2179-86 Jenson;

¹⁹ Mr. Swartout, Myerson's President and COO, identified several other potential tooth dealer candidates in his testimony. (Tr. 1348-51 Swartout.)

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188. In 1999, the total company sales of Dentsply's largest tooth dealer accounts, and Patterson, were and 95% dentist products, respectively. ; Tr. 3826 Wiltz.)

189. Under the agency's second definition of operatory dealer, the trial evidence also showed that these dealers can and do sell teeth successfully. The success of AccuBite Dental Supply proves that dentist-only dealers can become major players in the tooth market with minimal effort and investment. In 1987, AccuBite was an operatory dealer whose customer base was 99% dentists and less than 1% dental labs. (Tr. 2397-98 DeSautel.) In 1987, AccuBite began to investigate expanding its business to include tooth products. (Tr. 2399-4000 DeSautel; DX44; DX65A; DX65C.)

190. Ivoclar, Justi and Austenal each informed AccuBite that it did not see a need to change its distribution system. (Tr. 2400, 2402 DeSautel.) According to AccuBite's Vice President and Chief Operating Officer, Steven DeSautel, in rejecting AccuBite's request to sell Ivoclar teeth in 1989, Ivoclar informed AccuBite that it only sells direct to dental labs, not through dealers. (Tr. 2400-01, 2440 DeSautel.) Universal responded that it did not need to add any additional distributors. (Tr. 2401-04 DeSautel.)

191. AccuBite successfully received an employee with experience in the tooth market and obtained a contract with the State of Michigan to supply teeth. (Tr. 2450-51 DeSautel.) In 1992, Dentsply authorized Accubite as a Trubyte dealer. (Tr. 2398, 2404 DeSautel.)

In 1992, AccuBite operated its tooth department with just one employee. AccuBite's tooth department has expanded gradually as its tooth business has expanded. AccuBite added a second tooth department employee in 1997. (Tr. 2422-23 DeSautel.)

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AccuBite's tooth department reached its current size of three employees in 1999. One employee travels and solicits business from key tooth accounts. The other two employees manage the tooth counter and accept, pack and ship tooth orders. (Tr. 2420-24 DeSautel.) While AccuBite has 50 outside sales representatives and telemarketers, none of them have any responsibility for selling teeth. (Tr. 2422-24 DeSautel.)

192. Tri-State Dental Supply constitutes a current example of a dealer available to expand into the tooth business.

To generate demand for its products, Tri-State distributes brochures and flyers, conducts seminars and attends conventions/trade shows. (*Id.* at 3338-40.)

193. Tri-State became interested in selling artificial teeth as a result of inquiries from its existing customers, and Vito Clavelli, Tri-State's President, believes that Tri-State could "double" its business by selling teeth. (Tr. 3343-44 Clavelli.) Should Tri-State receive a tooth line, it intends to sell teeth to its existing dentist customers who operate their own in-house labs. (Tr. 3358-59 Clavelli (40% of Tri-State's customers operate in-house labs).) Tri-State already sells these accounts ancillary products used to fabricate dentures. (Tr. 3359 Clavelli.) Up to this point, it simply has not sold them artificial teeth. (Tr. 3359 Clavelli.) Tri-State anticipates expanding its tooth business beyond dentists with in-house labs by advertising to labs through brochures, flyers, conventions and Tri-State's sales force. (Tr. 3360 Clavelli.)

194. Moreover, Tri-State is undertaking affirmative steps to carry a line of teeth. Tri-State is interviewing people for a tooth counter position and will hire someone after July 2002. (Tr. 3354, 3375 Clavelli.) Tri-State is expanding its facilities by 6,500

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square feet, in part, to accommodate an inventory of artificial teeth. (Tr. 3354, 3375 Clavelli.) Dentsply has turned down Tri-State's request to become an authorized Trubyte dealer because Tri-State cannot provide Dentsply incremental tooth sales. (Tr. 3344-53 Clavelli; DX1618; DX1620, DX426.) Despite its availability and expressed interest in Ivoclar teeth, neither Ivoclar nor any other tooth company has contacted Tri-State about distributing artificial teeth. (Tr. 3361-62 Clavelli.)

195. The agency argues that dentist-only dealers are not potential distribution channels for two primary reasons: (a) the dealer would have to identify and cultivate different customers; and (b) the dealers would have to invest in a stock of teeth and other ancillary lab products, an investment which the agency deems "substantial." (Agency PFF ¶ 249.)

196. The evidence does not establish that the need to cultivate lab customers precludes operatory dealers from adding artificial teeth to their product offering. AccuBite has expanded its business to include labs. Also, as Mr. Clavelli testified, dentists with in-house labs serve as a fertile, initial customer-base for an operatory dealer's artificial tooth business. (Tr. 3343-44, 3359 Clavelli.) AccuBite followed a similar model.

197. The evidence record also shows that they are willing to sell teeth, or to consider selling teeth, if manufacturers promote and create demand for their teeth, as Dentsply does. (Tr. 3842-43 Shernowitz; Tr. 3849-50 Dhuet; Tr. 3859 Buckley; Tr.

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3865, 3867 Warren.)²⁰ Ivoclar and Vident have not approached these available dealers about selling artificial teeth. (Tr. 3844 Shernowitz; Tr. 3864 Warren.)

198. The cost of an initial tooth inventory does not preclude operatory dealers from taking on tooth lines, as the agency claims. Leach and Dillon became the national distributor for Schottlander with a \$0 investment in Enigma teeth. It expects to increase sales of Enigma teeth by close to 7 times by year end. (Tr. 4094-96 Dillon.) Leach and Dillon obtained its Enigma inventory from Schottlander on consignment. (Tr. 4345-46 Dillon.) Leach and Dillon only pays for the teeth once it sells them. (Tr. 4345-46 Dillon.) Even where dealers purchase tooth inventories, instead of obtaining consignments, inventory costs are not prohibitive or even substantial. Americana Dental Supply and Conger Dental Supply Co., well-established sub-dealers of Vita teeth, have needed to invest just \$20,000 in their tooth inventories to sell Vita teeth successfully. (Tr. 4323 Fernandez; Tr. 4321 Bauman.)

199. Nor would operatory dealers have to make a substantial new investment in ancillary "lab products," for the simple reason that these products already comprise an operatory dealer's standard inventory. Operatory dealers already stock and sell many of the same products dental labs use. For example, Tri-State sells stones, acrylics, impression materials, plasters and equipment to its dentist customers. (Tr. 3336-37 Clavelli; *see also* Tr. 477 Weinstock (Sullivan representatives can sell lab and operatory products).) These are many of the same products stocked by Zahn and sold to labs. (GX160.) There is no evidence in the record that the costs of stocking ancillary lab products precludes operatory dealers from distributing teeth.

²⁰ Three of these operatory dealers do not sell artificial teeth today because they are owned by larger dealers that already sell artificial teeth. (Tr. 3842 Shernowitz (Island Dental owned by Darby); Tr. 3852, 3857 Buckley (Smith Holden acquired by Henry Schein); Tr. 3864 Warren (Direct Dental acquired by Patterson).)

200. The agency references Sullivan Dental Supply as representative of operatory dealers unwilling to sell artificial teeth. (Agency PFF ¶ 253(a).) But Sullivan's interest in distributing teeth, or lack thereof, is affected by the fact that Sullivan is an affiliate of Zahn Dental Supply, Dentsply's largest tooth dealer. (Tr. 1801 Ackeret; Tr. 3858 Buckley (confirming that Sullivan is not interested in distributing teeth because "[t]hey have a division called Zahn that does that").) Sullivan and Zahn are both owned by Henry Schein, Inc. (Tr. 1801 Ackeret.) Sullivan is the only operatory dealer that the agency has identified that testified it has no interest in distributing teeth, even if profitable. Given the proper incentive and motivation, operatory dealers, other than Sullivan, can and do distribute artificial teeth. (Tr. 1139-42 Crane;

III. PERFORMANCE IN THE ARTIFICIAL TOOTH MARKET

A. Dentsply Is The Undisputed Market Leader In Product And Marketing Innovation Throughout The Market's History

1. Dentsply's History Of Innovating Artificial Tooth Products

201. Throughout its over 100-year history, Dentsply has introduced major advancements in the artificial tooth market. (DX119; Tr. 2525-26 Clark (listing "all of the major advancements or some of the major advancements the division had come up with relative to the market" as of 1993).)

202. Mr. Miles believes this "product innovation" has been "one of the most important things" that has allowed Dentsply to "initially develop and ultimately maintain" its market share. (Tr. 3447-48 Miles.)

203. At the turn of the 20th century, one of the founding partners of Dentsply invented a way to fasten porcelain teeth to dentures. (Tr. 3448 Miles.) After

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that, Dentsply proceeded to invent the first mould guide. (*Id.*) The mould guide was important because it allowed a lab technician to use “exact measurement[s]” when setting artificial teeth in a denture to ensure that the teeth would fit the patient’s jaw line. (*Id.*) Dentsply later introduced fluorescence into its artificial teeth. Fluorescence makes artificial teeth appear more “lifelike” and “translucent.” (Tr. 3448-49 Miles.)

204. Dentsply’s next major innovation was pioneering the artificial tooth market away from porcelain and towards plastic. (Tr. 3449 Miles.) Dentsply later developed an occlusion system that made it easier to bring artificial teeth into articulation. (*Id.*)

205. In 1981, Dentsply invented IPN, which increased significantly the wearability of plastic teeth and remains the “industry’s standard worldwide” for premium artificial teeth. (Tr. 3449 Miles; Tr. 2106-08 Jenson.) Dentsply introduced IPN to improve the wear resistance of its product offering. (Tr. 2489 Clark; Tr. 2107 Jenson.) It was a significant advancement relative to conventional plastic teeth. (Tr. 2489-90 Clark; Tr. 2107 Jenson.) The “big difference” was that IPN “totally changed the physical properties while giving a more aesthetic tooth.” (Tr. 2106 Jenson.) IPN lines have a strong surface hardness. (Tr. 1229-30 Ryan.) They also are more natural looking. (Tr. 1983 Jaslow (long lingual surfaces feel more natural to patient).) The Bioform tooth line was the first line Dentsply introduced in IPN material. Bioform IPN teeth are easy to set because they adhere well to the acrylic used as the denture base. (Tr. 2110 Jenson.)

206. Dentsply next introduced TruBlend SLM in Fall 1992. (Tr. 2488 Clark.) This too was introduced as a “superior wear-resistant denture tooth.” (*Id.*) A study performed by Dr. W. H. Douglas of the University of Minnesota demonstrated that TruBlend SLM was 75%-90% more wear resistant than Ivoclar and Vita. (Tr. 2489-90 Clark.)

207. With TruBlend SLM, Dentsply became the first tooth manufacturer to offer a lifetime guarantee on a tooth for stain resistance, wear resistance and for fracture. (DX119; Tr. 2491 Clark.) At the time, Dentsply provided a five-year guarantee on its IPN lines. Dentsply's competitors did not offer any wear guarantees for artificial teeth. (Tr. 2491 Clark.) Now Ivoclar offers a seven-year warranty. In response, Trubyte extended its guarantee on IPN teeth to ten years. (Tr. 2128 Jenson.)

208. TruBlend SLM became the "tooth of choice" for a segment of dentists interested in "superior wear resistance." (Tr. 2491-92 Clark.) These users tended to be dentists who did more implants and high-end dentistry. (*Id.*) Thus, TruBlend became "more niched" in its acceptance, rather than mainstream. (*Id.* at 2492.)

2. Development Of Dentsply's Portrait IPN Tooth Line

209. Christopher Clark, then Trubyte's newly hired Director of Marketing, decided to figure out why. He commissioned market research to help him understand the brand equities that existed in Trubyte's product lines. (Tr. 2493-94 Clark.)

Trubyte IPN teeth "came in at or near the top of virtually all of those attributes." (Tr. 2494-95 Clark.) In particular, dentists ranked IPN very highly for wear resistance, ease of setup, mould selection, and value for money. (*Id.*)

Based on the overall results of the image and attribute study, Dentsply concluded that Trubyte had very strong brand equity. (Tr. 2495 Clark.) Nonetheless, Dentsply determined to conduct additional market research on the aesthetic issue. (Tr. 2495-96 Clark.)

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